

THE HISTORICAL GEOGRAPHY OF IRAQ

BETWEEN THE MONGOLIAN AND OTTOMAN CONQUESTS

1258 - 1534

By

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Abstract

Iraq was dominated by several foreign powers between the years 1258 and 1534. It is generally believed that these powers were responsible for the loss of prosperity in the country and for the extension of the marshlands, the silting-up of the canals and the consequent shifting of the lower course of the rivers.

This thesis is a study of the historical geography of Iraq during this period. The work is divided into nine chapters.

Chapter I gives the historical background of the period, describing the siege of Baghdad by the Mongols and the subsequent conquest of the whole country.

Chapter II is a study of some aspects of the physical geography of Iraq, such as relief, climate, hydrology and mineral wealth.

Chapter III describes the courses and affluents of the Tigris and the Euphrates. A description is given of both rivers, together with the changes which took place in their lower courses. In addition, two maps of each river are included, showing how the rivers were described by two different geographers of the Mongolian era.

Chapter IV is a treatment of the various irrigation

canals.

Chapter V is concerned with agriculture. It includes land tenure, land revenue, soil, chief crops, forests and pasture lands. Special reference is made to the main problems of agriculture during the period, such as land administration, land tenure.

Chapter VI deals with industry and its problems during the period. A study is made of the different industries of the country, of those which survived the Mongolian conquest, and of those which were encouraged by the Mongols.

Chapter VII is concerned with communications. Particular note is given to the shifting of the highways from Iraq to Turkey as a result of the Mongolian raids and conquest.

Chapter VIII is a study of the trade relations of Iraq with other countries. Special attention is paid to the development of trade with Europe since the Abbasid caliphate.

Chapter IX deals with the administrative divisions during the Mongolian period.

The writer concludes by showing that the Mongols are not to be blamed for the loss of the prosperity of Iraq, but that the process of destruction started during the Abbasid period when most of the canals silted up and the cultivable lands were left desolate.

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I should like to express my sincere thanks to Mr. A. Mck. Frood for his invaluable help in the preparation and organisation of this work, to say nothing of the encouragement I received from his enthusiasm for the subject-matter. I am deeply indebted to Professor A. Austin Miller for his help, advice and fatherly kindness during my stay in England. My thanks are also due to Professor V. Minorsky for suggesting certain references, to Mr. Serkis of Baghdad for opening his private library to me and giving me of his published works, and to the staffs of the following libraries : the School of Oriental and African Studies, the British Museum, the Royal Geographical Society, the Iraqi Museum Library in Baghdad and, in particular, Reading University.

Reading, April 1959.

Muhammad Rashid Al-Feel.

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a. The Tigris.

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Irrigation.

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Agriculture.

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List of Abbreviations

- B. S. O .A. S. Bulletin of School of Oriental and African Studies.
- H. A. H. Hudud al-'Alam. By Husain, 'A. M.
- H. A. M. Hudud al-'Alam. By Minorsky, V.
- Geog. Jour. The Geographical Journal.
- J .R. A. S. The Journal of the Royal Asiatic Society.
- J. R. G. S. The Journal of the Royal Geographical Society.
- L. A. Lughat al-'Arab.
- M. Ch. T. B. Majalat Ghurfat Tijarat Baghdad.
- M. M. 'I. 'A. Majalat al-Majma' al-'Ilmi al-'Arabi.
- N. I. D. Naval Intelligence Division.
- N. S. Naval Staff.
- P. R. G. S. Proceedings of the Royal Geographical Society.
- S. G. M. Seottish Geographical Magazine.

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(died 1383) in Baghdad ✓

Introduction

Very little has been written in modern times about the history of Iraq between 1258-1534, and no attempt has been made to give a complete geographical description of the country in those times. This, however, is the object of this work.

In the history of Iraq, the Mongolian period is called the "Dark Period". It is indeed dark because very little is known about it, and only slight attempts have been made to study it. The age is characterised by the absence of contemporary native writers who had migrated to Egypt or Syria and most of those who did write about it were either Egyptians or Persians.

The writer of the present thesis started his research work eighteen months before coming to England in 1956, and consulted several historians in Iraq, including Professor A. A. al-Duri, Mustafa Jawad, 'Abbas Al-'Azzawi,

Ya'Kub Serkis and Gorgis 'Auad, all of whom are authorities on the history of Iraq during the Abbasid and following periods. They were all very helpful, and in particular Serkis, who opened his own library which may be considered as one of the finest private libraries in the Middle East.

In 1957 the writer undertook field work and visited al-Nahrawan, al-Ishaki, Wasit and the ancient Tigris Valley and Basra. He followed Shatt al-'Arab as far as Fao and also al-Saklawiya canal. A native of Mosul, he was familiar with the buildings of Sultan Lulu and seen part of the wall round the town before it was pulled down. He visited parts of al-Tharthar several times.

The writer was fortunate in doing his research work in England, for here there were more sources of information at his disposal than in Iraq. The continuous encouragement of his supervisor was a great incentive in overco-

ming the difficulties and the different British libraries were very helpful and obtained many references which were not always easily available. Noreover, just a few months ago the writer received a micro-film of the "Geography of 'Ibn said al-Maghribi" from the Bibliotheque Nationale in Paris. The writer consulted Professor V. Minorsky, who suggested several references and recommended two authorities from abroad.

Almost every available work was read and the writer was fortunate enough to find the report of an unknown German traveller from Cologne who came to Iraq shortly before 1350.

This thesis is based largely on the writings of contemporary geographers and historians, besides the geographers and historians of the Abbasid period. The historical works, which are in no way dispensable for a proper study of this period, were carefully read for the double purpose of

forming a clear historical picture, and also for collecting any useful geographical data which might appear.

Almost all these sources have been quoted, and the various views in them explained and discussed in order to produce as far as possible a truthful geographical picture of Iraq during the Mongolian period.

Sometimes the writer depended on journeys of the 16th and early 17th centuries. Some might say that these references are irrelevant, but it was necessary to use such books to obtain some idea of the state of the country in the years following the Mongol rule. It must be remembered also that the true and final Ottoman conquest of Iraq did not take place until the arrival of Sultan Murad IV in 1638, for the country was conquered by the Persians for part of the period after the first appearance of the Ottomans in 1534.

The author wishes, however, to emphasise that the results of his researches suffer from defects because lack of sufficient and accurate statistics often rendered comparison and judgment difficult and sometimes assumptions had to be made.

CHAPTER - 1

A BRIEF HISTORICAL SURVEY OF THE PERIOD BETWEEN THE MONGOLIAN AND THE OTTOMAN CONQUESTS

1. Introduction.

2. The mongols.

- (1) Timujin (Jengiz Khan)..
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A BRIEF HISTORICAL BACKGROUND TO THE PERIOD BETWEEN THE MONGOLIAN AND THE OTTOMAN CONQUESTS

1 - Introduction :

" They came , they slew , they departed and deported . " (1)

The rise of the Mongols their many conquests which were accompanied by comprehensive massacres and the destruction of towns and cities , was a dark and terrible page in the history of Asia and Eastern Europe , and it was to affect Iraq considerably .

These events made writers such as ibn al-Athir stop writing or even thinking of them because of their repulsiveness , (2) while al-Fakhri left it to the readers' imagination to picture the atrocities committed by the Mongols.(3) They extinguished forever the caliphate of Baghdad, looted its uncounted riches, massacred millions of people, reduced Baghdad , in a day , from the peerless seat of Islamic dominion to a shabby out-post of the Il-Khans empire . The Mongols massacred 1,800,000 people in Baghdad alone, threw the books in the Tigris and ruined most of the buildings . " The most ruinous of Holaku's acts in Iraq , however , was the studied destruction of the dykes and

1) Al-Mustawfi, « Tarikh-i-Guzida » , P. 141 .

2) « Al-Kamil » , vol . 12 , p. 233-5 .

3) Sykes, « A History of Persia » , p. 175 .

head works whose ancient and perfected system had been the sole source of wealth." (4)

Was all that had been written about the Mongols true, or the writers prejudiced against the Mongols? Did they make no attempt to justify such acts or look at them impartially? As for as Isaq is concerned this thesis attempts to provide an answer.

The period between 1258-1534 A.D. is divided into two epochs, during each of which the country was governed by a different race.

(i) THE MONGOLS 1258-1411 A.D.

Two different dynasties governed Iraq during this epoch:

(a) The Il-Khans (the descendants of Holaku between 1258 - 1336 A.D.)

(b) The Jalairs (another Mongolian tribe) 1337-1411 A.D.

This period was disturbed by another wave of conquests carried out by Timur and reminiscent of the conquests of Jengiz Khan and his grandson "Holaku".

(ii) THE TURKOMANS 1411-1508 A.D.

This epoch also saw two dynasties:

(a) Kara Kuyunlu 1401 - 1470 A.D.

(b) Ak-Kuyunlu 1470 - 1508 A.D.

4) Longrigg, "Four Centuries of Modern Iraq", p. 13.

This was followed by a short period of Safawid dominion which lasted until 1534 when Iraq was conquered by Sulaiman the Manificent. This was not the last conquest for it was followed by another Persian conquest at the beginning of the 17th century and in 1638 A. D. Murad IV conquered Baghdad. Ottoman rule lasted until the end of the first world war.

Iraq suffered greatly from frequent changes of dynasty in addition to revolts of the local governors, wars between rivals and natural factors, such as droughts, fires, hail, famines, locusts and pestilences, all of which acted together to destroy the wealth of the country.

The people in this period were in a state of lethargy and lost faith in themselves. They had opportunity to take their freedom but did not do so. They sent for someone from outside. (5)

The Il-Khan sultans and in particular Ghazan and his successors did their utmost to restore the wealth of the country. Moreover, the Jalairs, who made Baghdad their capital, continued the work begun by the Il-Khans, but civil wars hindered the work of restoration even if they did not cause much actual destruction.

5) According to Ibn al-Furat (vol. 9, part 2, p. 344) the Baghdadis sent a message to Timur when he conquered Tebris - inviting him to conquer Baghdad.

It is not surprising that Iraq showed a continuous decline .

All the dynasties in Iraq adopted a pro - European policy or , more accurately , a pro-Christian policy , a collaboration which was directed against either the Mameluks of Egypt or the Ottomans .

2- The Mongols (6) :

The Mongols were a clan among , a member of great nomadic Turkish confederacy , wandering after water and

6) The name " Mongol " , originally applied to a limited group of interrelated clans and tribes and became a purely political term , embracing all the heterogeneous elements which were incorporated in the Mongol ulus by Jengiz Khan and his successors , both as the result of military operations and the interplay of the forces of diplomacy and self interest .

The general Mongol tribes and clans are divided by their origin into two groups :

1 . The Derelgin or common Mongols who trace their descent from Naguz and Qiyan , the two survivors of the massacre of the Mongols in ancient times by the other Turkish tribes .

2 . The Nirun Mongols , stemming from one of the three sons of Alan qua of the Qorulas , a Derelgin tribe . Jengiz Khan's own tribe sprang from a group of the Nirun Mongols called Qiyat .

Blocket , E . , " Introduction a L'Histoire Des Mongols De Fadl Allah Rashid Ed-Din " , p. 202-3 .

Muller , D. G. Maitland , " A Study and Translation of the First Book of the First Volume of the ' Compendium of Histories ' by Rashid

pasture . They dwelt on the margins of the Great Gobi Desert (al-Mafaza), (7) between China and Turkistan , (8) round Lake Baikal (9) where six rivers rise in a very remarkable mountainous land . The first three (namely Onon , Indoga and the Keralon) are the main western sources of the river Amur . The other three - the Tuls , Ouhon and Selinga , flow into Lake Baikal . The six rivers , while flowing towards the Amur and Lake Baikal , water the whole stretch of the country where the Mongols

al-Din Fadl Allah Concerning the Turkish and the Mongol Tribes . " pp . 43 , 45 , 51 , 52 .

The name " Mongol " appeared in history for the first under the reign of the Tangs . When ibn Haukal mentioned the tribes of China and Central Asia , he did not mention the Mongols . It is certain , however , that the Chinese made it known to the outer world . Lane Poole added (p . iii) that it probaly came to be applied to the whole group of clans only when the chief of a particular clan bearing that name acquired an ascendancy over the rest of the confederacy and gave to the greater the name of the lesser . Their encampment consisted of more than 40,000 tents , and if we reckon 10 persons to a tent the Mongols numbered 400,000 persons .

Curtin , Jeremiah , " History of the Mongols " , p. 2 .

Margoliouth , " Umayyads and Abbasids " , p. 286 .

7) Ibn Khaldun , " Kitab al-'Ibar " , vol . 5 , p. 516 .

Poole , Lane , " A History of the Mongols " , p. ii .

8) Ibn Khaldun , op. cit . , vol . 5 , p. 516 .

9) al-Sadafi , " Tarkh Dwal al-Islam " , vol . 2 , p. 267 .

began their activity as known to us . (10) According to Ibn al-Athir they lived at Jibal Taghmaj in China . (11)

The Mongols and Turks were said by Ibn Khaldun to be descended from Komar Ibn Yafith, the Son of Noah . (12) Al-Kalkashandi added that they were desce -

10) Curtin , Jeremiah , op. cit . , pp. 2-3 .

According to al-Juwaini the home of the Tatars is in an immense valley , whose area is a journey of seven or eight months both in length and breadth . It is bounded by the land of Khitai in the east , the country of Uighur in the west , the Qirpiz « the Kirghiz Turks » and the river Selengei « Selenge » in the north and the Tangut « people of Tibetan origin. who had founded a kingdom in North-Western China » and the Tibetans in the south .

Al-Juwaini , Ala ad-Din ' Ata Malik , " The History of the World Conqueror " , translated by John Andrew Boyle , vol , I , pp. 21-22 .

11) op . cit . , vol . 12 , p . 236 .

A contemporary writer , i . e . al-Munshi al-Niswi « p. 4 » gave the name as Tamghaj the residence of the great Khan , which apparently our great historian was confused and modified the name as " Taghmaj " and gave it to the country inhabited by the Mongols .

Al-Makrizi « vol . I , part I , p. 204 » and Ibn Kathir vol . 13 , p. 82 made the same mistake .

For details about the Mongolian race , see Fisher pp. 83 - 84 .

12) Howorth added (Jour . Royal Asiatic Soc . , vol . XVI , p . 647) that this descent would hardly have been suggested by any Mongol writer before the conversion of the western Mongols to Islam .

Ibn Khaldun , op. cit , vol . 5 , p . 515 .

nded from Sirash Ibn Yafith or from Turk Ibn 'Abir Ibn Shamuil Ibn Yafith. This sect included the following tribes: al-Kapchak, al-Tatar, (13) al-Khazlakhiya and al-Khazar (14)

According to al-Siyuti, the Mongols, as compared with Turks, have broader faces and are fuller in chest, leaner in flank, tawny in colour, quick in movement both of body and mind, and have smaller eyes. (15)

"The language of those people is blended with that of India near which they dwelt." (16) In this environment and among those tribes lived Temujin (Jengiz Khan) the greatest conqueror.

1 - Temujin [Jenkiz Khan]

He was originally named "Temujin", (17) and was born at Dhul Ka'da 20 th 549 A. H. (January 26 th

13) Al-Kalkashandi, op. cit., vol. I, p. 366.

His own words concerning the Tatar tribe were:

والطغرغر وهم التتر ويقال فيهم التتار بزيادة ألف . والطرطر بابدال التاء طاء .

14) Ibn al-Athir, op. cit., vol. 12, p. 236.

Ibn Khaldun, op. cit., vol. 5, p. 515.

15) al-Siyuti, "Tarikh al-Khulafa", p. 493.

16) al-Siyuti, op. cit., p. 493.

The idea of al-Siyuti is vague because there are more than 100 languages spoken in India.

17) Ibn Khaldun vol. 5, p. 525 gave his name as Temurjin تمرجين

1155 A . D .) (18)

His father Yissigei was a governor of 13 Mongol tribes under the suzerainty of the Great Khan of the Mongols.(19) Yissigei died when Temujin was 13 years old .(20) He was abandoned by his tribe , the " Nirun ".(21) Temujin , however , being from his early youth extremely energetic , rallied his fellows , fought with the rebels and defeated them . In this way he established his supremacy over them at the age of thirty . (22)

There are several ideas and stories describing how

18) al-Sadafi vol , 2 , p . 267 and Margoliouth p . 286 said that Jengis Khan was born in 1154 .

al-Mustawfi , " Tarikh - i . Guzida " , p . 140 .

According to Howorth vol . XVI , p . 647 Jengiz was born in 1162 A . D . , seven years later than the date given by al-Mustawfi and eight years later than that given by Margoliouth and al-Sadafi .

19) The country of China is of vast extent , its circuit occupying a six months' journey . It was composed of six principalities , while according to Ibn Khaldun vol . 5 , p . 526 there were nine , with a sovereign chief holding sway over them all . This was the great Khan who resided at Tamghaj and had a position similar to that of the caliph .

al-Siyuti , op . cit . , p . 493 .

al-Munshi al-Niswi , op . cit . , p . 4 .

20) al-Mustawfi , " Tarikh - i - Guzida " , p . 140 .

21) Ibid , p . 140 .

22) Ibid , p . 140 .

Temujin established his authority, but whatever the stories were, Temujin, who passed his early years on horse-back, was brave and suffered in silence such hardships as fatigue, hunger, thirst, cold and pain. He encouraged similar characteristics in his own followers, and they all formed a united body of auxiliaries, absolutely obedient to his will.

To organise the life of his attendants Temujin laid down his "Yasa" which became the sacred law of his people. In this way Temujin prepared his people for the future he had planned. (23) Temujin then took the name of "Jengiz Khan" (the very mighty king) the greatest conqueror of his day. (24)

The general directions of his conquests were to the east and to the north, but suddenly he turned to the west.

The main reason for this abrupt change was the killing of his envoys and traders sent by Jengiz Khan to

23 According to Toghri Birdi vol. 6, p. 268 the name of the sacred law laid down by Temujin was called al-Yask. The origin of al-Yask is "Si Yasa" (سي ياسا) which is an expression composed from both Turkish and Persian. This was modified and became "Siyasa" (سياسة politica).

24 According to al-Kalkashandi vol. 4, p. 304 the correct pronunciation is Janks Khan (جنكص خان).

According to al-'Azzawi vol. 1, p.82 Jengiz plural "Jinik singular" means the conqueror, or the great, or the rough.

جنكيز (جينيك مفرد جنكيز بمعنى العظيم والقهار، أو الفظ القاسي)

Khwarizm Shah . (25) Some historians said that al-Nasir the Abbasid caliph -appealed to Jengiz Khan for help against Muhammad Khwarizm Shah , who attacked his kingdom . (26) 'The Mongols ' campaign continued towards

25) It is said that in 1216-1217 A. D. Shah Muhammad received in Bukhara the envoys of Jengiz Khan , among them Mohammad al - Khwarizmi " of Khwarizm " . These men brought ingots of silver, musk , jade and costly white robes of camels ' hair .The envoys carried a message from Jengiz Khan , asking for peace and encouraging trade between the two countries . These envoys were followed by 400 merchants carrying different sorts of Mongolian products . They travelled as far as Otrar " the most easterly point of Khwarizm Shah's kingdom " . The governor sent a message to his master telling him about the merchants and their rich merchandise , to which Khwarizm's reply was to order the merchants to be killed and their merchandise to be sent to him . When Jengiz Khan heard about this event, he sent a message to Khwarizm Shah telling him : " You have killed my men and spoiled their goods , be ready for I am coming against you with a force which you will be unable to withstand .

Ibn Khaldun , op . cit . , vol . 5 , p . 111 .

al-Siyuti , op . cit . , p . 455 .

al-Munshi al-Niswi , " Sirat Jalal al-Din Mankabarti " , p . 33 .

Ibn Kathir , " al-Bidaya wal Niyaya " , vol . 13 , p . 82 .

Margoliouth , op . cit . , p . 289 .

Curtin , Jeremiah , op . cit . , p . 100 .

Ibn al-Athir , op . cit . , vol . 12 , pp . 236 - 7 .

26) al-Makrizi , " al-Suluk " , vol . 1 , part 1 , p . 218 .

Muir , " The Caliphate " , p . 588 .

the west during the following years even after the death of Jengiz Khan, which took place in 1227, until they had conquered Iraq and Syria (for a short time only) . (27)

2 - The Conquest of Iraq

After his inauguration , Mangu Khan decided to send two military expeditions , one to the east (i . e . to China) with his brother Kublai as a leader , (28) and the other to the west with his second brother Holaku (29) as a leader . (30) Mangu Khan commissioned Holaku to conquer the lands from the Oxus to the borders of Egypt and to take the castle of Almund from the Ismailits . Long before

27) See Map No . 1 . The western campaigns of the Mongols .

28) Jengiz Khan was succeeded by his son Kaan 624-643 A . H . = 1227-1245 A . D . Kaan was succeeded by Kuyuk Khan 1245 - 2251 who in his turn was succeeded by Mangu Khan , whose inauguration took place in 649 A . H . 1251 A . D .

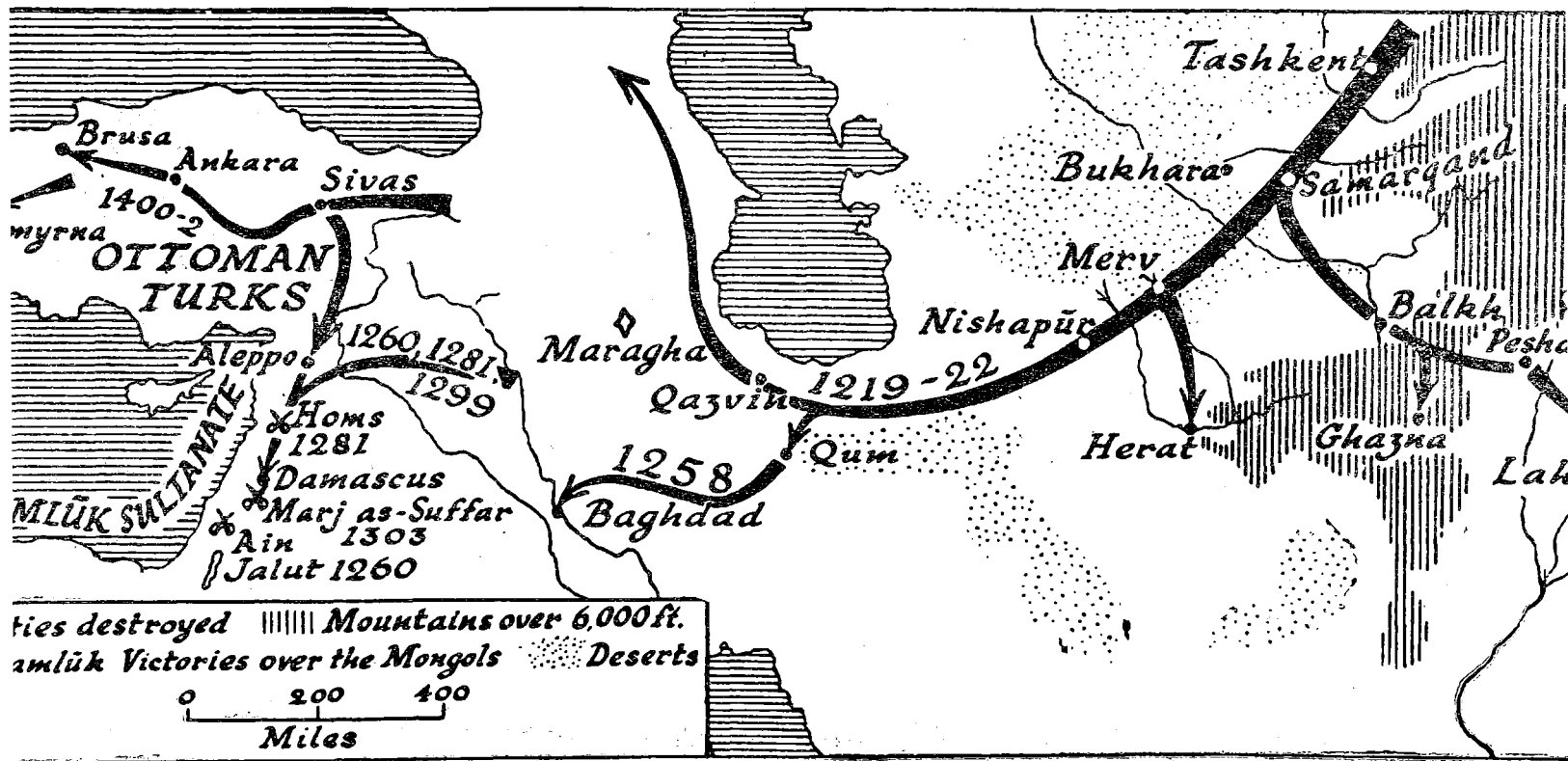
al-Sadafi , op . cit . , vol . 2 , p . 267 .

Howorth , " History of the Mongols from 9 th to 19 th century " , part III , p . 56 .

al-Makrizi , " al-Suluk " , vol . 1 , part 2 , p . 383 .

29) Holaku was the fifth son of Tului , the youngest son of Jengiz Khan . He was born about the year 1216 . He was first mentioned in the winter of 1224 and 1225, when he was nine years old Howorth , op . cit . Part III , p . 9 .

30) al-Makrizi , op . cit . , vol . 1 , part 2 , p . 383 .



MAP No. 1 (After Kirk)

Holaku conquered Baghdad, however, the raids of the Mongols had started. According to Ibn Kathir⁽³¹⁾ the first Mongol raid was in 1220, when they reached as far as Arbil.

In 1221 they raided the vicinity of Baghdad, and before long Badr al-Din Lulu, the Sultan of Mosul and Sinjar, acknowledged the authority of the Mongols and helped them in their siege of Arbil as well as in the conquest of Baghdad. (32) After the capture of Almund, the main fortress of the Ismailits, Holaku turned towards Baghdad for several reasons.

He was attracted by its noted wealth and was aware of the weakness of the city. He received encouragement from Ibn al-'Alkami the vezir of al-Musta'sim, (33) and

31) op. cit., vol. 13, pp. 86, 94. It seems that there were friendly relations between the Mongols and the Abbasid caliphs. The inauguration of Kuyuk Khan in 1246 A.D. was attended by a very remarkable body of persons of rank and consequence, among whom was the chief judge Fakhr al-Din, from Baghdad, representing the caliph. Howorth, op. cit., part 111, p. 56,

32) Ibn al-Futi, "al-Hawadith al-Jamia", p. 99.

al-Makrizi, op. cit., vol. 1, part 2, p. 410.

Ibn Kathir, op. cit., vol. 13, p. 200.

33) The cause of this conspiracy and collaboration between Ibn al-'Alkami and Holaku was the rivalry between the Sunnis and the Shi'is in Baghdad.

Ibn al-'Alkami was a shi'i and the 'Abbasids were Sunnis, thus he=

aimed to fulfil the plan of Mangu Khan to conquer the countries between the Oxus and Egypt . He was afraid of a struggle with a power as formidable as that of the caliph , whose troops had already twice defeated the Mongols , and he knew that it was a serious matter to assail a town as famous as Baghdad . Thus he took precautions accordingly and prepared a plan for the attack .

The right wing of his army was formed of Baiju and his troops . Baiju set out from Rum , crossed the Tigris at Mosul and arrived at the appointed place to the west of Baghdad . There he was joined by Bulghai , Suiak and Buka Timur , who took the road from Shahrazur to Dakuka and crossed the Tigris at Tekrit . (34)

The left wing was formed of the troops coming from Luristan , Bayat , Kuzistan and Tekrit , under the command of Kitubuka Noyan , Kodsua (also called Kurusun) and Nerhilka .

Holaku himself was to be in the centre , hence he

wrote to Holaku pointing out the weakness of Baghdad , thinking that he might replace al-Musta'sim « the 'Abbasid caliph » with another one from the descendant of 'Ali .

al-Siyuti , op . cit . , p . 465 .

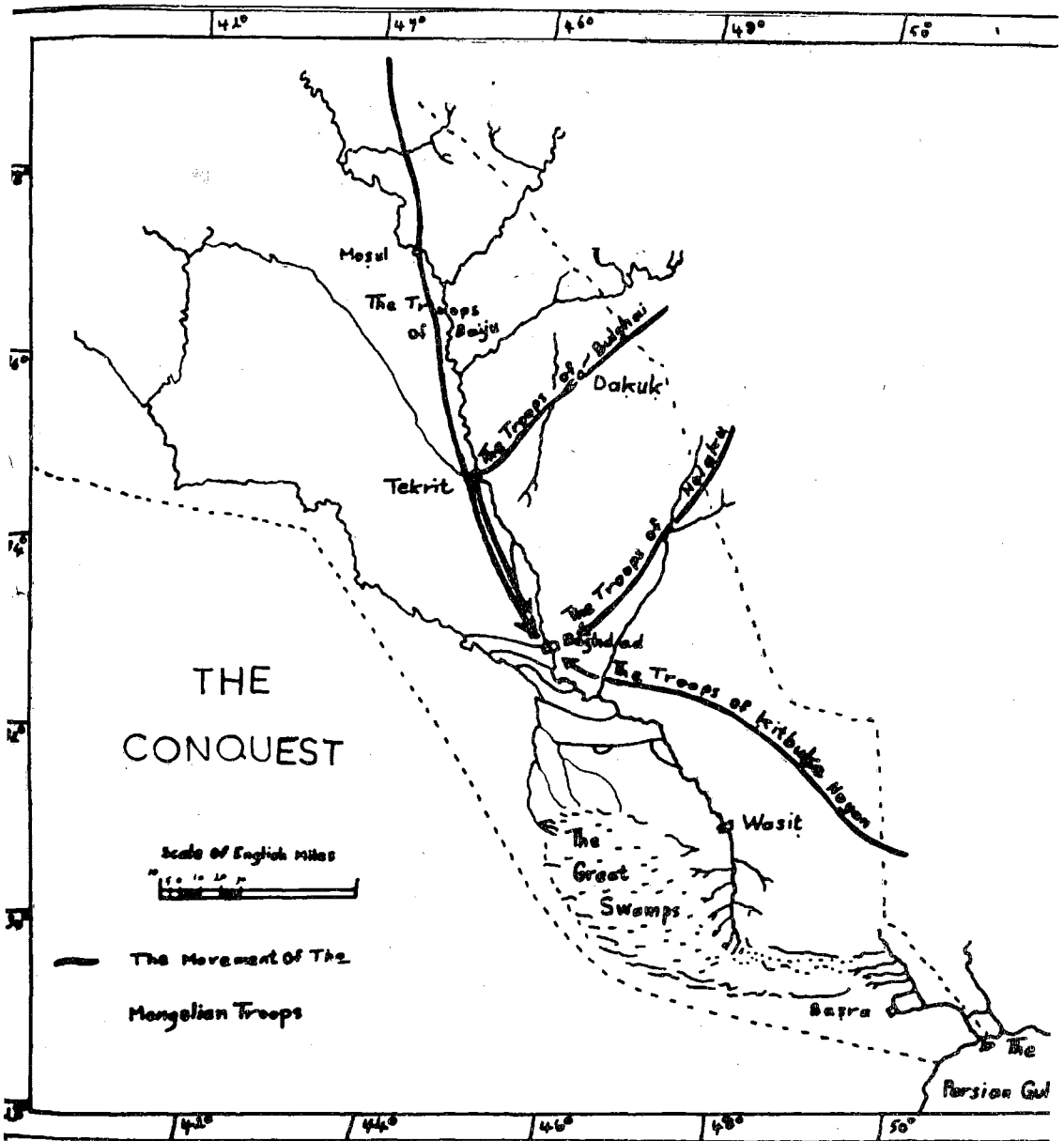
Ibn Khaldun , op . cit . , vol . 5 , p . 542 .

al-Mustawfi , “ Tarikh - i - Guzida ” , p . 142 .

al-Dhahabi , “ Duwal al-Islam ” , vol . 2 , p . 122 .

al-Safadi , “ Al Wafi Bi al Wafiyat ” , vol . 1 , p . 184 .

34) See Mep No . 2 . The Conquest .



MAP No. 2

took the road through Hulwan-Khanikin Baghdad that is the Khrasan road. (85) The great route of Hamdan-Baghdad passed through high mountins whose summits were covered with snow all the year. In these mountains stood the fortress of Dertenk, (36) whence the route was supervised and the frontiers of Iraq were guarded. It was, in fact, the key to al-Iraq al-'Arabi. (37)

In Dertenk the commandant was Hisam al-Din 'Aka. (38) Holaku sent for him, received him well, and gave him as an appanage the castles of Werudah and Merj. Having collected a considerable force about him, 'Aka seems to have repented of his treachery. Through a friend he made

35) Ibn al Futi, op. cit., pp. 319—323.

Ibn Taktaka, "Kitab al Fakhri Fi al Adab Al Sultaniya wal Dowal al-Islamiya", p. 97

al-'Azzawi, "Histore de L'Iraq Entre Deux Occupations", vol. 1, pp. 168—9

al-Sadafi, op. cit., vol. 2, p. 281

D'Ohsson, "Histoire des Mongols Tchinguiz Khan Jusqua Timour Bey Ou Tamerlan", vol. 4, pp. 226—7

Curtin, Jeremiah, op. cit., p. 250

Howorth, op. cit., part 111, pp. 119, 122

36) Dertenk was within A'mal Baghdad during the 'Abbasid caliphate. It is now within Persia.

37) D'Ohsson, op. cit., vol. 4, p. 222

Curtin, Jeremiah, op. cit., p. 249

38) al-'Azzawi, op. cit., vol. 1, pp. 164—5

known at Bakhdad the plans of the enemies, and declared that if the caliph would send him one corps of trained horsemen, or according to others if the caliph would acknowledge him as ruler of these fortresses, he would provide a 100,000 Turkomans and Kurds. With these he would stop the advance of the Mongols against Baghdad. His proposition was not accepted by the caliph. Meanwhile the intrigue had reached the ears of Holaku, who captured Hisam al-Din 'Aka by deception and destroyed his fortress. (39) The whole array moved to capture Baghdad. At the news of the advance of Baiju and the other Mongol troops who speedily arrived to the north of Baghdad, the inhabitants of al-Dujayl district, al-Ishaki, 'Isa canal and Melka canal (Nahr al-Malik) took refuge in Baghdad. The inhabitants gave golden bracelets or several dinars to cross the Tigris to Baghdad, where they lived in schools, mosques and in the wide roads which were overcrowded with these refugees. (40)

39) The 'Abbasid caliph was blind not to accept the offer of Hisam al-Din 'Aka and to protect the natural gateways of the country, such as the defile on which stood Dertenk or the Shahrazur Pass,

D 'Ohsson, op. cit., vol. 4, p. 111

al-'Azzawi, op. cit., vol. 2, pp. 164—5

Howorth, op. cit., part III, p. 118

Curtin, Jeremiah, op. cit., p. 149

40) Ibn Taktaka, op. cit., pp. 148—7, 300

Ibn al-Futi, op. cit., p. 311

The situation in Baghdad was very serious and becoming even more so. In 654 A.H. (1256 A.D.) a very high flood of the Tigris surrounded Baghdad and submerged many of the houses while a huge breach broke out at Kubain (the name of a canal) and thus Dujayl, Nahr 'Isa and Nahr al-Malik were flooded and many cultivated lands were destroyed. (41) In the year 1257 a dreadful riot broke out at Baghdad between the Sunnis and the Shi'is which led to a great plunder and destruction of property. (42) The son of the caliph was an ardent Sunni so he supported the Sunnis in this riot, while Ibn al-'Alkami was a fanatical Shi'i. He was unable to do anything so he communicated with Holaku and encouraged him to conquer Baghdad, and he tried to withhold all information concerning the proceeding of the Mongols from his master (al-Musta'sim). The caliph himself was a weak man who passed his time in watching dancers, tumblers. (43) Furthermore Ibn al-'Alkami persuaded the caliph to reduce his army, which continually drained his resources, so that with the money saved, he might send gifts to the

41) Ibin, pp. 318, 319

42) Nicholson, "A Literary History of the Arabs", pp. 455-6.

43) As proof of his weakness, when he heard that the troops of Holaku were approaching, he said: "I only want Baghdad: it is not too much. Let Holaku take all the rest."

invaders and gain their friendship . Consequently the caliph reduced the army from 100,000 to 20,000 . Ibn al -- futi added that the caliph neglected his soldiers , thus they started begging in markets and mosques . (44) Moreover , the great confusion and a rise in prices were caused by the rush of refugees from the surrounding districts .

(3) The Battle — Field of Baghdad (1258)

The Dawadar (45) (the commander of the caliph troops) was camping between Ba'kuba and Bajisra on the great khurasan route, (46) but when he heard that part of the Monglian troops had already arrived to the north -- west of Baghdad, he crossed the Tigris with his army . Aceordingly the caliph ordered Murshid the eunuch to take the rest of the army and march on to the Khurasan road to meet Holaku at Khanikin . According to ibn al -- Futi the other princes felt it prejudiced them to have a eunuch as a commander, and they did not obey the orders . (47) The Dawadar met the Mongolian troops one league to the north of Kantara Bab al -- Basra (the bridge of

44) Ibn al-Futi , op. cit . , pp . 320-321

Ibn Kathir , op. cit . , vol . 13 , p . 201

Howorth , op. cit . , part 111 , p . 115

45) His name was Mujaid al - Din Aybak .

46) Ba'kuba was wrongly written by Howorth part 111 , p . 121 as Ya'kuba , and he gave the name of Bajisra as Bashiriya .

47) op. cit . , pp . 319, 320 , 321

the gate of al -- Basra) on 9th Muharram 656 A.H. (16th January 1258 A.D.) . (48) According to Ibn Taktaka (49) the troops of al -- Dawadar were 30 , 000 soldiers, while Ibn Kathir said they were only 10 , 000 . (50) The army of Baiju was larger than that of al -- Dawadar . The Mongols were defeated at the start of the battle, or perhaps practised their usual tactics and pretended that they were defeated, (51) and retreated, followed by the caliph's army until dark . They crossed Nahr Bashir (a small canal taking its water from al -- Dujayl canal) and camped till the morning . (52) During the night the water of the canal flooded the whole area (53)

48) This bridge was called by Ibn 'Abd al-Hak " al - Kantara al - Jadida" on the Sarat canal and it was renewed several times .

Ibn 'Abd al-Hak, " Marasid al-Itila", Tomus, pp. 463-4

49) op. cit . , p. 300

50) op. cit . , vol. 13 , 201

51) Ibn Taktaka , op. cit . , p. 311

52) Howorth part 111 , p. 122 wrongly called it Nahr -i- Shir and added that this canal was conneted with the Euphrates . If , however , we are to believe Ibn al - Futi p . 324 , Ibn Khaldun vol . 5 , p . 543 and Ibn Taktaka p. 97 Nahr Bashir was a canal branching from al-Dujayl .

D'Ohsson , op. cit . , vol. 4 , p . 231

53) Ibn al-Futi , op. cit . , p. 324

According to Howorth part 111 , p. 122 Ibn al-'Alkami was the one who sent a body of men to divert the water of the canal . This might , however , have been performed by the Mongols themselves or might alternatively have been due to floods natural for the time of year " January " when rain was expected .

Early in the morning the Mongols made a fierce attack on the caliph's army which was forced to withdraw from the battlefield. During the retreat they were faced by floods and their horses could not move because of the mud. Some of the defeated soldiers threw themselves into the water and swam, but the Mongol troops followed them and routed the defeated army of the caliph. Very few survived to tell the story of their defeat. (54) After the defeat of the army of the caliph, the Mongolian troops took up their positions: one division settled near al -- 'Adudi hospital (al -- Bimaristan al -- 'Adudi) (55) at the Upper Bridge of Boats, and a second had its siege camp below this to the south, probably near the Lower Bridge opposite Kasr al -- Taj (the crown castle) . (56)

54) Ibn al-Futi , op. cit . , p. 324

55) Ibn al-'Ibri , " Tarikh Mukhtasar al-Duwal " , p. 471

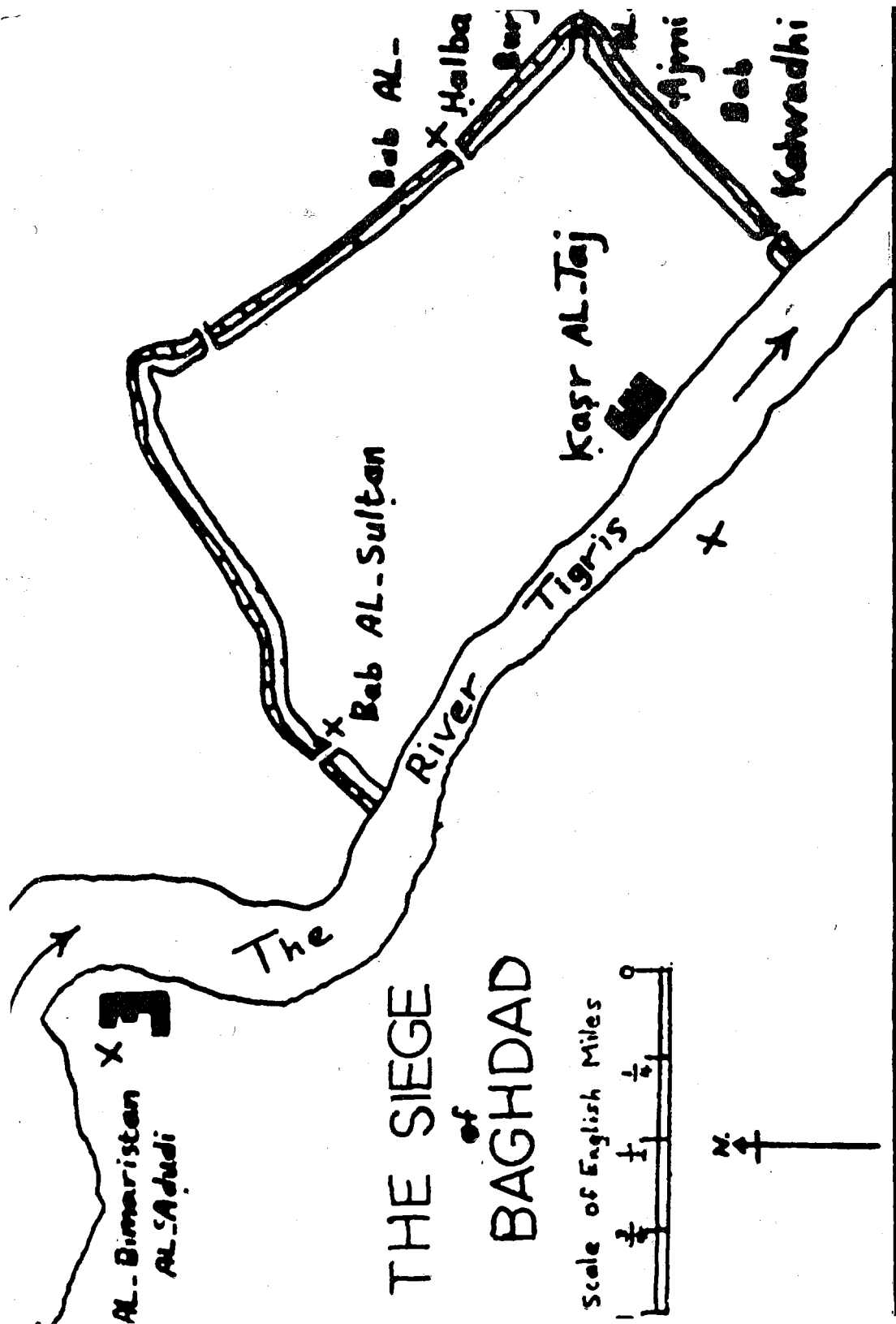
The hospital was built on the ruins of the Khuld Palace , and was completed in 981 , a year before 'Adud al-Dawal the Buwayid died . It suffered damages during several inundations . Baiju made the Quarter of the Bimaristan 'Adudi the upper point of his attack on the western side of Baghdad .

Le Strange, " Baghdad During the 'Abbasid Caliphate " , pp . 103, 104, 105, 319

56) Ibn Taktaka , op. cit . , p. 300

Kasr al-Taj was a palace at Dur " houses " al-Khilafa " in the east of Baghdad " . Al-Mutadhid laid the foundation of the famous palace of the Crown, and was completed by al-Muktafi . In later

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Holaku left his baggage at Khanikin and on the 12th Muharram 656 A.H. (19th January 1258) (57) marched towards Baghdad on the celebrated Khurasan road with the main body of 200,000 soldiers, including the Georgians (Kurj) and the troops of Mosul . (58) He pitched his tent to the East of Baghdad opposite Burj al -- 'Ajmi (the Persian tower) and the Halba gate where the main attack was directed . (59) The

times it was known as Dar al-Shatibiyah . Having been struck by lightning a second palace " the Crown " was constructed by al-Mudi , which later on was renewed by al-Mustansir .

Le Strange , op. cit., pp. 251, 260, 261

Ibn 'Abd al-Hak, op. cit. , Tomus Secundus , p. 194

See Map No . 3, The Siege of Baghdad .

57) Ibn al-Futi, op. cit., p. 325 .

Howorth part III , p. 122 and al-'Azzawi vol. 1 p. 173 gave the 11 th of Muharran 656 « 18 th January 1258 » as the date of the arrival of Holaku at Baghdad .

58) Ibn Kathir, op. cit., vol. 13, p. 200 .

Nicholson, op. cit., p. 445 .

59) The Halba gate was next to Bab-Dafar and it is the Bab al-Talism of the early 20 th century . Not far from the Halba gate and to the south-east was kati'at al - 'Ajmi , near which the great bastion in the wall, called Burj al-'Ajmi « the Persian tower » , at the meeting point of the eastern and the southern walls of East Baghdad . It was against this point that Holaku directed the storming party to make their main attack, and Baghdad fell when Burj al-'Ajmi was taken .

Le Strange , op. cit. , pp. 291 , 292 , 293 .

Badr Taha , " Mihnati al-Islam al-Kubra " , p. 96 .

right wing of the Mongol army under the command of Bulghai and Couli posted them selves outside the northern walls of the city, facing Bab Suk al -- Sultan (the gate of the market of al -- Sultan) (60) while the left wing, under the command of Ilka Noyan, was encamped before the Kalwadha gate at the southern extremity of East Baghdad . (61)

The Mongols collected the bricks that lay about outside the city and built two walls, one on the eastern part of the town, the second on the western, and built great mounds, upon which were placed battering -- rams and machines for shooting burning naphtha . As there were no stones near Baghdad to use for the battering - rams the Mongols collected bricks used date -- palm trunks and sent for rocks from Jabal Himrin and

60) Bab Suk al-Sultan was situated at the point where Bab al-Mua'dam stood in the early years of the 20 th century .

D'Ohsson , op. cit ., vol . 4, p. 233 .

Howorth, op. cit ., part III , p. 122

Le Strange, op. cit ., p. 282

al-'Azzawi , op. bit ., vol. 1 , p. 147

61) Kalwadha gate was otherwise called the " Basaliyah " gate and according to Le Strange p.281, Hamd Allah al-Mustawfi called it Bab al-Khuluuj . It was to the south of Baghdad . In the early years of the 20 th century Bab al-Sharki " the Eastn gate " was situated at this spot

Ibn 'Abd al-Hak, op. cit ., Tomus Primus, p. 509

Jalula . (62)

On the other hand the caliph ordered the walls of Baghdad to be repaired and barricades made . (36) The battls started on the 22nd of Muharram 656 A.H. (29th Januery 1258 A.D.) 64) The attack was closely pressed especially on "Burj al-'Ajmi" . Bombardment continued for six days . Letters were sent to Kadis, Jurists and others who were not at war . (65) On the

62) Ibn Taktaka , op. cit. , p. 300

al-Sadafi , op. cit. , vol. 2, p. 281

al-'Azzawi , op. cit. , vol. 1, p. 177

Howorth, op. cit. , part III, p. 126

They probably brought the rocks from Jabal Himrin by the way of the Tigris and from Jalula by way of the Diyala river .

63) Howorth, op. cit. , part III, p. 126

64) Ibn al-'Ibri, op. cit. , p. 474

The geographers and the historians of the Mongolian era and others gave different dates for the battle . Ibn Taktaka p. 300 gave the fourth of Muharram 11th February for the start of the battle , while al-Makrizi vol. 1, part 11, p. 409, 30th January was given . Al-Sadafi vol. 2, p. 281, al-'Azzawi vol. 1, p. 173 and Howorth part III, p. 123, agreed with Ibn al-'Ibri that the start of the battle was on the 22nd of Muharram .

65) al-'Azzawi, op. cit. , vol. 1, p. 174

D'Chsson, op. cit. , vol. 4, p. 234

These letters contained the " Aman " أمان "decree of safety " given from Holaku to those who were not at war . This was a tactical measure to quell their desire for war .

28th Muharram 656 A.H. (4th February 1258 A.D.) Burj al-'Ajmi was battered down . The Baghdadis were horrified when they saw the Mongolian on al -- 'Ajmi tower . (66)

The invaders had taken care to build a bridge of boats on the Tigris to the south of Baghdad to stop anyone from escaping . According to Ibn al -- Futi very many of the inhabitants of Baghdad were captured killed on this bridge when they tried to escape . (76) Al -- Musta'sim set out , attended by members of his family and the nobles of the court . The whole party were beheaded save the caliph who was strangled (68) or kicked to death (69) according to the Yasa of Jengiz Khan . (70)

The Mongols rushed into the town, let loose the sword

66) Howorth, op. cit., part III, p. 123

Ibn Taktaka p. 300 , gave the 19 th of Muharram , 26 th January , as the date of the battering down of Burj al-'Ajmi , while Ibn al-'Ibri p. 474 and al-Sadafi vol. 2, p. 281, mentioned the 26th Muharram .

Ibn Kathir vol. 13 , p. 203, found it enough to mention the end of Muharram .

67) op. cit., p. 326

68) al-'Omari, " Chayat al-Maram", p. 183 M. S.

69) al-Siyuti, op. cit., p. 472

al-Yafi'i op. cit., vol. 4, p. 139

70) According to the Yasa of Jengiz Khan , " no royal blood to be shed " .

and the massacre continued for about 40 days (71) till the number of the slain was about 1,800 , 000 (62) souls

71) al-Siyuti, op. cit., p. 497

al-Makrizi, op. cit., vol. 1, part 2, p. 410

Ibn al-Futi, op. cit., p. 399

According to al-Dhahabi p. 123, and Nicholson p. 446, the massacre continued for 34 days, while Ibn al - 'Ibri p. 475, and D'Ohsson vol. 4, p. 240, mentioned that the sacking of Baghdad continued for a week.

72) al-Dhahabi, op. cit., P. 123.

al-Yafi'i, "Miraat al-Janan", vol. 4, p. 137.

al-'Omari, "Ghayat al-Maram", P. 183, M. S.

Nicholson, op. cit., P. 446.

Different figures were given for the number of those massacred in Baghdad. Al-Siyuti P. 472, found it enough to say that the killed were more than 1,000,000, while Ibn Kathir vol. 13, p. 202 was not sure so he said that they were either 800,000 or 1,800,000. Ibn Khaldun vol. 5, P. 543, gave the figure as 1,300,000. The figure given by D'Ohsson vol. 4, P. 240, was 800,000. Al-'Azzawi vol. 1, P. 4, said that the massacred numbered 800,000 but he agreed with another figure 80,000, which he quoted from the "History of Muslih al-Din al-Lari". It seems that the writers were afraid of giving a high estimate because the Baghdad of 1258 was no longer that of Harun al-Rashid for it had lost most of its population. Presumably the population was less than the number killed, but we must bear in mind that the inhabitants of the whole surrounding districts had taken refuge in Baghdad. Therefore we might expect the population of Baghdad to have increased greatly during this temporary migration. Even so an estimate of 1,800,000 massacred was too high.

None escaped except those who hid themselves in wells and conduits . (73) Merchants who had trade relations with the Mongols were given "Yarlighs" (Firman) of safety and they took Mongolian guards to protect them . (74) Besides this comprehensive butchering, the Mongols destroyed the Mosque of the Caliph, the shrine of Musa al -- Kadim, and the tombs of the caliphs at Rusafa . Destruction of most of the streets and private houses completed the ruin of the city . (75) The most horrible act of vandalism was the destruction of the libraries causing thousands of books to be lost. (76) Ibn Khaldun added (77) that the books were thrown into the Tigris . When Holaku left Baghdad he gave an order that the great mosque of the caliph and the shrine of Musa al - Kadim should be rebuilt . (78)

To complete the conquest of Iraq, Bugha Timur and his

73) al-Siyuti, op. cit., P. 472 .

74) Ibn al-Futi, op. cit., P. 329 .

75) Ibid, P. 330 .

Le Strange, op. cit., P. 343 .

76) al-Kalkashandi, " Subh al-A'sha", vol. 1, P. 466 .

77) op. cit., vol. 5, P. 443 .

78) Le Strange, op. cit., p. 343

al-Makrizi vol. 1, part 11, p. 410, and that although what had happened in Baghdad was horrible, it was not as bad as the happenings in other towns, because Holaku wanted to keep it in good condition. Consequently, when he left the town, he issued an order to reconstruct Jami' al-Kasr "the palace's mosque".

troops moved southwards and captured Wasit, While Kufa and Hilla were taken peacefully . (76)

In al -- Jazira (northern Iraq) Badr al -- Din Lulu, the Sultan of Mosul and Sinjar, was a friend of the Mongols and even sent his troops to help in the conquest of Baghdad . (80) After his death in 657 A.H. (1259 A.D.) his son and heir collaborated with the Egyptians against the Mongols . In 1260 Mosul was besieged for 12 months and in 1261, when from lack of food the town could withstand the siege no longer , the Mongols went in and massacre continued for seven days until they left the town in complete ruin .

The Mongols tried to conquer Syria and sometimes succeeded, but for a short time only . They were defeated by the Mameluks of Egypt, (81) at Ayn Jalut in 1259 . at Hims in 1260 and at Abulustan in 1272 A.D. (82)

79) Ibn al-Futi, op. cit., pp. 330-331 . He added that much killing and plundering took place in Wasit .

80) Ibn Kathir, op. cit., vol. 13, p. 200

81) These campaigns to Syria determined the relations between the Il - Khans and the Mameluks of Egypt . There was continuous tension, almost until the reign of Abu Sa'id « the last Il-Khan Sultan » .

82) al-Siyuti, op. cit., p. 475

al-Makrizi, op. cit., vol. 1, part 11, pp. 431, 433 .

do. "al Mawa'id wal I'tibar", vol. 2, p. 238 .

Ibn al-Futi, op. cit., p. 344 .

Minorsky, "The Middle East in Western Politics in the 13th, 15th and 17th Centuries", p. 434 .

Nicholson, op. cit., p. 446 .

See Map No. 1, The Western Campaigns of the Mongols .

Ghazan commanded three campaigns against Syria, the first of which was in the winter of 694 A.H. (1299 — 1300) and culminated with the Mongol victory at Majma 'ul -- Muruj near Hims and occupied Syria for 100 days, the second campaign did not meet any resistance, and the third was in 702 A.H. (1302 A.D.) in which Ghazan's troops were defeated (83)

(4) The Il--Khans Dynasty (84)

Holaku abolished forever the Abbasid caliphate in Baghdad. A new era started during which Iraq was governed from Tebriz and, later on, from Sultaniya by the newly -- formed dynasty (the Il -- Khans) .

Holaku appointed Muayad al -- Din al -- 'Alkami as vezir and Fakhr al -- Din as chief of administration . (85) 'Ali Bahadur was given control of the merchants and artisans .

83) al-Mustawfi, "Tarikh-i-Guzida", pp. 143, 146.

Browne, " A History of Persian Literature Under Tartar Dominion", p. 41 .

84) Il - Khan means provincial Khan, to indicate the homage they owed and invariably acknowledged to the supreme Khan.

Poole, S. Lane, "The Mohammadan Dynasties", p. 217 .

85) Holaku in his letter to Mangu wrote : "These people are lawless and living in anarchy, the country is devastated, and the ordinances of Chanks Khan are not carried out, for he ordered us to cherish the lands subject to us or conquered by us and not to lay them in waste." Howorth, op. cit., part III, pp. 194, 195.

'Imad al -- Din caused the mosque of the caliph and the Meshhad of Musa Jawad to be built . Ilka Noyan and Kara Buka, with 3,000 Mongols, were sent in to the city to restore order and rebuild the houses and the Bazaars . (86)

The Mongols tried their utmost to restore the prosperity of Iraq, and they succeeded . Holaku appointed the governors and ordered them to rebuild their provinces and he punished severely anyone who neglected his duty . (87)

Under the new governor 'Ala al -- Din, Iraq began to flourish again . He spent 100 , 000 gold pieces in digging a canal leading from the Euphrates to Meshhad 'Ali near Kufa, and the neighbourhood of Nejef . He devoted himself to restoring the country's prosperity . During the Il -- Khan's reign the people understood for the first time the meaning of living in peace .

In the field of commerce the Mongols tried to preserve good relations with their neighbours and trade flourished . Stringent laws ensured the safety of the roads, and anyone who hindered trade was severely punished . In 1267 Ghazan Khan

86) Ibn al-'Ibri, op. cit., P. 475 .

al-'Azzawi, op. cit., vol. 1, P. 202 .

Ibid., part III, PP. I3I-2 .

87) In the year 1258 Holaku condemned " Siraj al - Din " Sadr A'mal Wasit and Basra " the governor " to death , because he neglected the restoration of the wealth of his province .

Ibn al-Futi, op. cit., PP. 238-9 .

marched, with his troops, through Choukhi and al-Bataih and he captured or killed most of the rebels who used to plunder the merchants . (88) The Il -- Khans found that Al -- Tai tribe were causing much trouble to caravans, consequently, to placate them, Khudabenda gave Hilla as a fief to Muhana their chief . (89) The Il -- Khans arranged the postal services and appointed couriers on all the postal relays to help passengers, and sometimes set up sign -- posts on the roads . (90) In the financial field they reduced the taxes, and Ghazan Khan abolished the bailing way of collecting al -- Kharaj "Nidam al -- Iltizam" and al -- Tamgha and appointed tax and Kharaj collectors . (91)

The Il-Khans gave great encouragement in the industrial field. Ghazan Khan , in fact had a fixed plan as far as industry was concerned . A government factory was established in Baghdad The Il -- Khans encouraged the manufacture of arms, saddles and anything related to war . To encourage industry they exempted certain industrial materials, such as yarns, from taxes . (92) They also encouraged cultivation . Ghazan in

88) Ibn al-Futi, op. cit., P. 495.

89) Al-'Azzawi, op. cit., vol. I, PP. 428-9.

They were dwelling in the area between Iraq, al-Jazira and al-Sham " Syria " .

90) al-Mustawfi, op. cit., P. 220 .

91) Al-'Azzawi, op. cit., vol. 1, P. 399 .

92) Al-'Azzawi, op. cit., vol. 1, p. 513 .

particular urged everyone to obtain lands and cultivate them and he distributed barren lands among his army as fiefs . He gave seeds to the farmers and distributed bulls in order to improve farming standards . These are some of the services rendered to the country by the Il -- Khans, and we must always remember that their dynasty ruled in the 13th and 14th centuries, when nature still played the greatest part in the fate of human beings . (93) The country was (and still is) liable to be affected by high inundations and shortage or excess of rain, and by locusts and pestilences . Moreover, while we might perhaps blame the Il -- Khans for neglecting the irrigation system and clearing the canals or re -- digging them, we cannot agree with Longrigg and others in condemning them absolutely. The ruin of the canals was not entirely their fault, but was due also to the great quantity of silt carried by the Tigris and the Euphrates .

(5) The Jalair Dynasty (94)

With the death of the last Il-Khan Sultan Abu Sa'id, in 1336 A.D. , the empire of the Il -- Khans fell into decay and a short

93) In 1258 A.D. famine took place in al-Jazira, Syria and Rum D'Ohsson, op. cit., vol. 4, p. 271.

94) Jalair was a great Mongolian tribe that suffered during the war with al-Khitai. They were of great help to the Il-Khans .

al-'Azzawi, op. cit., vol. 2, pp. 25—26

Muller, D. E. Maitland, op. cit., p. 37

period of anarchy and civil wars ensued, ending in the victory of Shaikh Hassan the Jalair and the formation of a new Mongolian dynasty, the Jalair dynasty .

A fundamental change took place as far as Iraq was concerned, for the new dynasty used Baghdad as a capital (95) instead of Sultaniya and Tebriz . During the reign of Shaikh Hassan (1337 — 1356) and his son Owais (1356 — 1374) the country passed through a peaceful phase . Both sultans encouraged the rebuilding and restoring of the country .

Industry and art flourished, in addition to building, the results of which are still to be seen in Baghdad .After the death of Sultan Owais a period of civil war ensued between brothers until Sultan Ahmad idn Owais obtained supreme authority over Iraq and Persia .

In this period Timur started his career as a great conqueror, so Sultan Ahmad fled to Bayazid, the Ottoman Sultan, and then to Egypt with Kara Yusuf . In 808 A.H. (1405 A.D.) he was once more the actual ruler of Baghdad .

His breach with Kara Yusuf the Turkoman and his ensuing invasion of Adharbaijan ended in his defeat and his death in 1411 A.D. (96)

95) al-Sadafi, op. cit., vol. 2, p. 290

96) al Sakhawi, "Al Dau al Lami'." vol. 1, p. 245

Poole, S. Lane, op. cit., pp. 246—247

(6) Timur (Timur the Lame)

"Timur the Lame" was the last and greatest of the Mongol conquerors . He was of the family of Jengiz Khan al though not a direct descendant . (97) He was born near Samarkand in 1333 A.D. (98) When Timur reached puberty he was set over certain districts in the trans -- Oxianan empire of Jagatai . (99) He was promoted to the vezirate upon which he completely usurped the authority of his master and marched against the world as Jengiz Khan had done before him . (100) Timur began to overrun the surrounding lands, and in 30 years his ruthless army conquered the lands from Delhi to Damascus and from the sea of AraI to the Arabian Gulf . (101) In 795 A.H. (1393 A.D.) Timur's rule reached the borders of Iraq, and the news of the preparations of Sultan Ahmad (the Jalair) for resistance gave Timur a good opportunity to have the excuse for the attacking of Iraq . On hearing of the approach of Timur's troops, Sultan Ahmad fled to Rahba and then to

97 Longrigg, op. cit., P. 14

Margoliouth, op. cit., P. 293

98 Poole, S. Lane, " Thrkey", P. 63

99 Ibid, P. 293

100 Poole, S. Lane, op. cit., P. 266

Margoliouth, op. cit., P. 293

101 Poole, S. Lane, op. cit., P. 64

Aleppo . (102) In 795 A.H. (1393 A.D.) Timur plundered Baghdad but did not destroy it . (103) He marched towards Tekrit and Mosul and ruined both towns . (104) Sultan Ahmad took refuge in Egypt . (105) In 797 A.H. (1394 A.D.) Sultan **Ahmad** came back to Iraq and stayed in Baghdad until 1398 . In that year , fearing the approach of Timur , he asked for help from Kara Yusuf , the prince of Diyar Bekr, who accompanied him to Baghdad . (109) The troops of Timur were approaching so Sultan Ahmad, accompanied by Kara Yusuf , fled to Bayazid the Ottoman , in Rum , and left Prince Farkh in Baghdad as a governor . (107) He especially enjoined him not to shut the gate against Timur . (108) In 803

102) Ibn al Furat, "Tarikh ibn al Furat", vol. 9, part 2, P.344

Sandres, "Tamerlane or Timur the Great Amir", P. 54 .

103) Ibn 'Arab Shah, "Ajaib al Makdur Fi Akhbar Timur", P.43

104) According to Ibn al 'Imad vol. 5, P.344, Timur built two minarets from the heads of the people were massacred in Tekrit .

Ibn Khaldun, op. cit., vol. 5, P. 508

al 'Azzawi, op. cit., vol. 2, PP. 210, 212

105) Ibid, vol. 2, PP. 230, 231

Timur sent his envoys protesting against the action of Sultan al Dahir Barkuk, in receiving Sultan Ahmad in his kingdom.

106) al 'Azzawi, op. cit., vol. 2, PP. 234—5

107) Ibid., vol. 2, PP. 239—240

Sandres P. 107, gave the name of the governor as Faraj.

108) Sandres, op. cit., P. 167

A.H. (1400 A.D.) the troops of Timur entered Baghdad and started the devastation and massacre . It is said that Timur ordered each of his soldiers to bring him two heads from among the people of Baghdad . (109) They slew about 90,000, and built 120 towers (minarets) from their heads . (110) Timur laid waste the city , after he had overturned it from top to bottom and taken from it the hidden wealth . (111)

In the year 806 A.H. (1403 A.D.) Timur considered the rebuilding of Baghdad, and he appointed Mirza Abu Bekr as a governor for this purpose . (112) Timur died in 1405 A.D. (807 A.H.) and with his death the Timurid reign in Iraq was practically ended .

(3) The Turkoman Dynasties

The Turkomans came from Ma Wara al-Nahr (beyond the river) (113) and settled in Belad al-Rum . (114) They were

109) al 'Azzawi, op. cit., vol. 7, P. 739

Ibn al 'Imad, op. cit., vol. 7, P. 65

110) Ibid, op. cit., vol. 7, P. 65

111) Sandres, op. cit., P. 168

Ibn 'Arabshah, op. cit., P. 120

Longrigg, op. cit., P. 14

Ibn al 'Imad, op. cit., P. 65

112) al 'Azzawi, op. cit., P. 528

113) The Arabs used to call the country to the north of the Oxus Belad Ma Wara al Nahr .

114) al 'Azzawi, op. cit., vol. 4. P. 15

composed of several tribes, such as al-Aghaziya, Danshmandi, Ak-Kuyunlu, kara-Knyunlu, Kara Kichili, etc . (115) Two of these tribes succeeded in conquering Iraq and formed two dynasties, one after the other .

(1) The Kara Kuyunlu Dynasty (116)

(or the Barani dynasty) (117)

The original centre of the Kara Kuyunlu federation lay at Arjish on the northern bank of Lake Van . (118) According to Minorsky (119) they had probably occupied this territory at the time of the Seljuk invasion .

During the Mongol domination these clans were still unorganized, and only during the reign of Arghun Khan 683--690 A.H. (1284 -- 1291 A.D.) did they establish themselves . The Jalairs asked their assistance several times . In the year 775 A.H. (1373 A.D.) Bairam Khuja (the chief of the Kara Kuyunlu) had good relations with Sultan Owais, the Jalair . on the death of the latter, Bairam Khuja conquered both Mosul

115 Ibid, vol. 3, vol. 4, P, 15

116 Kara Kuyunlu means " the black sheep " . they got this name because they owned black sheep .

117 After the Barani family which organized this tribe .

118 Minorsky , " Jihan Shah Kara Kuyunlu and his Poetry " vol. XVI, P. 272, B. S. O. A. S. 1954

Longrigg, oP. cit ., P. 14

119 oP, cit ., vol. XVI, P. 272, B. S. O. A. S. 1954

and Sinjar in 778 A.H. (1376 A.D.) . (120)

Kara Yusuf the second chief of the line was several times driven into exile by Timur, but always returned .

Both Sultan Ahmad the Jalair and Kara Yusuf had their refuge in the Court of Bayazid the Ottoman and at the court of Sultan Barkuk in Cairo . After the death of Timur in 1405 (807) Kara Yusuf resumed his former domination and in 1411 he conquered Baghdad and added the other dominions of the Jalairs . During the Kara Kuyunlu dynasty the country passed through unsettled years, during which the people suffered much misfortune as a result of the several revolts and the continuous wars between rivals . (121)

The end of the Kara Kuyunlu dynasty was brought about in the year 1470 A.D. (874 A.H.) by another Turkoman tribe, the Ak-Kuyunlu, when Hasan Bey al-Tawil (Uzun Hasan) conquered and killed Jihan Shah in 1467, conquered Tebriz and entered Baghdad peacefully .

120 al 'Azzawi, op. cit ., vol. 3, PP. 93, 94, 96

121 From records of 890 A. H. 1471, we still hear the news of the Jalairs , Dundi Sultan, the daughter of Sultan Hasan the Jalais , conquered Basra and ruled there until her death in 1419 . In 884 « 1421 » Sultan Owais ibn Shah Walad the Jalair attacked Baghdad . No doubt this continuous war between rivals , rebels and brothers resulted in the entire neglect of the country .

Al 'Azzawi, op. cit , vol. 3, PP. 55, 63

(2) The Ak-Kuyunlu Dynasty

(The white sheep dynasty) (122)

The Ak-Kuyunlu group of tribes was based at Diyar Bekr and its vicinity . The Ak-Kuyunlu consisted of several clans which had been organized by leaders belonging to the Bayandur tribe . During the Mongol domination the clans were still unorganised . They first established their authority when Timur appointed Kara 'Othman as governor of Amid and its vicinity .

Kara 'Othman added Sinjar, Arbil and Mosul to his principality . (123) The White Sheep overcame their rivals by killing Jihan Shah and entering Baghdad in 1470 . (124) A conflict arose between the two growing powers, that is, the Ottomans and the Ak-Kuyunlu, and ended in a fierce struggle between them. In 1473 A.D. Sultan Muhammad (the Ottoman) marched against Uzun Hasan (of the Ak-Kuyunlu) at the head of 100,000 soldiers .

The country enjoyed a peaceful period of 20 years during the reign of Uzun Hasan and Sultan Ya'kub . They encouraged agriculture, reduced taxes, ensured the safety of the roads so

122) They were called Ak Kuyunlu or the white sheep because they owned and used to graze "white sheep"

123) Minorsky, " Jihan Shah Kara Kuyunlu and his Poetry ", vol XVI, pp 878-3, A. S. O. A. S. 1954

Al 'Azzawi, op. cit. vol. 3, pp. 804, 810

124) Ibn Ayas, " Badai ' Al Zuhur Fi Wakai' Al Duhur ", p. 176

that trade and pilgrimages flourished again and last but not least Sultan Ya'kub exterminated al-Musha'sha and his attendants .

The court of Sultan Ya'kub was always busy with the envoys of most of the governments of that period . (125) After the death of Sultan Ya'kub, 896 A.H. (1490 A.D.) a period of unsettlement, civil wars between rivals and revolts ensued everywhere, affording a good opportunity for the newly risen power, the Safawids, to rise and establish themselves . In 914 A.H. (1508 A.D.) "Bark Bey" the last Ak-Kuyunlu governor, left Baghdad when the news that the Safawid army under the command of "Lala Hasan" followed by Shah Isma'il al-Safawi himself, was approaching Bahdad . The people of Baghdad then selected as governor Muhammad Kamuna who supported the Shah's policy and authority. Although they entered Baghdad peacefully , a fierce and terrible massacre of the people of the Sunni sect took place, the only survivors being those who had taken refuge in the houses of Shi'is . They ruined the tomb of Imam Abu Hanifa and 'Abdul Kadir al-Gailani . The period of the Safawids in Iraq did not last very long, because of the religious antagoism between the Shi'i Safawids and the Sunni Ottomans, embittered by the widespread Shi'i propaganda in Asia Minor , which brought about a war between them . Selim the Grim marched upon Persia and defeated the Shah at the battle of Chaldiran in 920 A.H. (1514 A.D.) . Selim entered

125) Minorsky, " Persia in A. D. 1478—1490 ", P. 85

Tebriz and annexed Diyar Bekr . (126) In the year 941 A.H. (1534 A.D.) Sulaiman the Magnificent marched at the head of an army to Tebriz and after he had conquered it, he marched to Baghdad on the celebrated Khurasan road . When Muhammad Khan Taklo (the last Safawid governor) heard of the approach of the Ottoman army he left Baghdad . Thus the Sultan took the town without bloodshed . (127)

Sultan Sulaiman ordered the land to be registered, dug a canal from the Euphrates to Mashhad al-Husain and maintained the mosques of both sects (i.e. Sunni and Shi'i) .

(4) Conclusion

We see from the preceding survey that all the campaigns against Iraq followed the celebrated Khurasan road . It was very easy to hinder their advance at special points such as the defile of "Dertenk", as we have seen from the proposition of 'Aka, the governor of Dertenk fortress, to al-Mustasim . This proposition

126 Al 'Azzawi, op. cit ., vol . 3, P. 353

Poole, S. Lane, op. cit ., P. 856

127 The Ottoman Turks were a small clan of the Oghuz tribe, who were driven westward from Khurasan by the Mongols migration, and took refuge in Asia Minor early in the 13th century . In recognition of their aid in war, the Seljuk allowed them to Pasture their flocks in the Province on the borders of the Byzantine Bithynia . Here 'Othman the eponymous founder of the dynasty was born in 1258 " 656 A. H. " Ibid , P. 886

sounded reasonable, but the caliph was not sensible enough to accept the offer, which might have saved his kingdom or, at least, have delayed the invasion until he could gather himself and his army for either a real attack or a long defence.

The unsuccessful Mongol campaigns against Syria and the Mameluks of Egypt determined the policy of the Il-Khan dynasty, which collaborated with the Christians first against the Mameluks who had driven the crusaders out of Egypt and Syria, and later on against the Ottomans who had begun to raid Europe. This policy no doubt encouraged trade between Iraq and Europe.

From the previous survey we conclude that Iraq suffered greatly from the frequent changes of dynasties, civil wars, revolts of local governors and the rise of such parties as al -- Musha'sha, which proceeded to ravage the land. All this led to one result, namely, neglect of duties and responsibilities on the part of the rulers.

The money which should have been spent on the restoration of the country was used to prepare campaigns. Canals were not cleared, nor river banks strengthened, because no money was invested for this purpose and no time devoted to the task. This failure to keep the banks and dams in good repair resulted in continuous floods, which no doubt increased the area of al -- Bataih and caused the rivers to change their course. Neglect of the irrigation system and the extension of al-Bataih (the

marshlands) contributed to the gradual reduction of the cultivated lands . Accordingly , with the diminished resources readual reduction of the cultivated lands . Accordingly, with country, prices became higher and famine was rife .

To restore its former prosperity, the country needed a stable government. Stability was essential for the adequate control of the rivers and the maintenance of the irrigation system, which was, in fact, the primary source of wealth . Without an annual inspection and reinforcement, the rivers were liable to burst their banks and flood the country or change their courses and render vast regions waterless . If the canals were not constantly cleaned of the heavy sediment deposited annually on their beds, they silted up . In consequence, the water they could carry decreased in volume and the area they served was restricted . The people living in now waterless areas gradually became poorer . Many moved to other parts and those who remained were forced to change from cultivation to stock-breeding , which was more suitable in the lands now liable to winter and spring inundation . The upheaval caused by the continuous civil wars resulted in a state of general insecurity . The towns people, therefore, began to sell their houses and set themselves up as shpherds . The prosperity of the country whcih depended on agriculture began to diminish, because as people adopted the life of nomadic shepherds more and more lands were left barren and strife broke out between peasants and shepherds .

Peasants always tried to keep the waters of the rivers and canals within their banks and protect lands from inundation , while shepherds wanted the lands to be flooded in order to have more pastures . Tribe after tribe of nomads from Nejd crossed the Euphrates to the pastures of Iraq . Grazing lands were allotted by the unending process of tribal war . From the Lurish hills up to Sinjar there were a few small towns, surrounded by tracts grazed and dominated by the tribes alone .

Lack of peace encouraged craftsmen, artisans, scholars , jurizts and others to migrate either to Egypt or Syria . Sometimes they were directed by a sultan or a conqueror to build a town or to construct a palace . Timur had done this when he conquered Baghdad . He took with him to Samarkand all those who were excelled in any branch of are or industry .

It is difficult to decide where to lay the blame for this state of affairs . It might be due to the Mongols, who conquered the country and massacred 1,800,000 human beings in Baghdad alone, or to the continuous revolts and civil wars . Perhaps it was due to the Ottomans who did not try to help the country during the five centuries of their long domination, or perhaps to a gradual decline in the country since the 4th (10th) century .

It has been customary to paint a bright picture of the country during the 'Abbasid caliphate . Firmly rooted in our minds are the days of " AThousand and One Nigh--

ts " , the glorious reign of Harun al — Rashid , and we tend to think that the country always enjoyed such prosperity as during those immortal times . Of the Mong — olia era, however, we paint a bloodred picture, as if their rule were a continuous massacre and devastation .

The wide empire of Harun al-Rashid had shrunk to a single province, and the Abbasid caliphs, at least for the last three centuries of their dynasty , were the puppets of their Turkish bodyguards , who treated them sometimes severely. Some were killed and others were tortured. Most of the canals, Such as the celebrated Naherawan canal and nearly all those of Baghdad were ruined. The country was twice conquered, the first time by the Buwayids and then by the Seljuks .

After Holaku had conquered Iraq and massacred most of the population of Baghdad, he tried to keep Baghdad in a good state and ordered the town to be rebuilt .

As far as irrigation is concerned no proof has been found that the Mongols destroyed the dykes and the canals . The only incident recorded was the flooding of the battlefield to the north of Baghdad when the waters of Nahr Bashir were turned onto these lowlands . It is not certain whether this was done by al--'Alkami and his attendants or by the Mongols themselves . The Mongols tried to restore the lost prosperity of the country but their dynasty crumbled very quickly and another came onto the stage to play its part .

This continuous change of leadership, the troubler times and the scarcity of survivors hindered the work of repair, for, once the canals and rivers had been neglected, scouring was difficult and made the restoration of the country rather difficult .

In addition to the different conquests and the natural factors which devastated the country, we conclude from the previous survey that another factor played an important part . This was the religious fanaticism of the people which was one of the incentives to bring Holaku to Iraq . The continuous tension between Sunnis and Shi'is ultimately acted, together with the other factors, to push the country further towards devastation and into oblivion .

CHAPTER - 2

**Some Aspects of the Physical Geography of Iraq
According to the Geographers of the Mongolian Period**

1 — Introduction

2 — Relief and Drainage

(a) al-Bataih

(1) Origin

(2) Area

(3) Description

(b) al-Thar thar

(c) Moun tains

(1) Jabal Judi

(2) Jabal al-Silk

(3) Jabal She'ran

(4) Jabal Barimma

(5) Jabal Sanam

(6) Jabal Sinjar

(d) Deserts

3 — Climate

(a) Characteristics of the Climate

(1) Range of temperature

(2) Seasonal rhythm

(3) Precipitation

(4) Relative humidity

(b) Heat

(c) Winds

(1) The north winds (al-shamal)

(2) The south winds (al-Janub)

(d) Rain

4 — Mineral Wealth

(1) Iron

(2) Bitumen

(3) Naphtha

(4) Mumia

(5) Salt

(6) Sulphuric springs

5 — Conclusion

Some Aspects of the Physical Geography of Iraq

1 — Introduction

From ancient times the country was recognized as consisting of two distinct parts each of which was known by various names at different times . These two divisions were reflected in the administrative units of the country .

During the Abbasid and Mongolian periods the country comprised al -- Jazira in the north and Iraq in the south . The topographical features of the two regions encouraged this division for whereas Iraq was a monotonous alluvial plain, al-Jazira lay higher and its monotony was broken by expanses of bed rock and scattered ridges .

During the Middle Ages the physical conditions of the country especially of the southern section -- were entirely different from what they are now, by reason of the great changes which have taken place in the courses of the Euphrates and the Tigris, and the formation of al-Bataih as a result of the floods which always threatened the country destruction . Moreover , the alluvial plain has since extended further southwards into the Arabian Gulf .

The climate of the country was probably similar to that of today, with perhaps only minor changes . There may have been

a slight rise in temperature, because the country in those days was cultivated every where and the irrigation canals formed a close pattern which no doubt contributed to a loss of heat . On the other hand the relative humidity was higher then than now because of the existence of al-Bataih, which covered a vast area in southern Iraq .

The geographies of the Mongolian times are rich in descriptions of certain aspects of the relief of the country, together with accounts of its climate, mineral wealth and hydrology .

2 — Relief and Drainage

There are several physical features which attracted the attention of the geographers of the Mongolian period and these they dealt with in some detail . Those which might be included here were al-Bataih of southern Iraq, Wadi al-Tharthar in al-Jazira and the mountains . In addition there were slight references to the deserts of the country .

(a) Al-Bataih (1)

In the Middle Ages both the Tigris and the Euphrates discharged their waters into the Great Swamps, (al-Bataih) of

1) al-Bataih " the plural form of al-Batiha " meaning the swamps or lagoons . The shallow parts of al-Bataih , thick with reeds , were called Ajam (أجام) while Hawr (هور) was a great sheet of " clear " water in which no reeds grew . Abu al-Feda , Takwim al-Buldan , p . 43

Ibn Serapion, " Description of Mesopotamia and Baghdad", p. 28

southern Iraq, which stretched, according to Abu al-Feda, between 73° east and 32° north . (2)

1 -- Origin : Al-Baladhari (3) placed the origin of "al-Bataih" as far back as the reign of Kubadh I . In his day the dykes along the Tigris had been neglected for a long time and when the waters rose they poured through a huge breach to the south of Kaskar and flooded the low-lying lands . According to al-Baladhari, Kubadh was too weak and too lazy to repair the breaches and thus they were left . (4) During the reign of Anu Shirwan the Just -- son and successor of Kubadh -- the dykes were partially repaired and the lands brought back into cultivation . Around the year 627 A.D., during the reign of Chosroes Abarwiz, a contemporary of the Prophet Muhammad, both the Tigris and the Euphrates rose in a flood, such as had never been seen before and burst

2) Abu al-Feda in his statement P . 43 about the longitude and latitude of al-Bataih was not very helpful because he mentioned only two directions which only allows us to recognise one point . However, he was better than the other writers who did not mention anything, and by this longitude and latitude we can obtain a rough idea about the situation of al-Bataih .

The longitudes of Abu al-Feda began at the coast of the western sea 10 degrees east of those beginning at the islands of immortality (جزائر الخالدات)

Ibid , P . 73

3) " Kitab Futuh al-Buldan ", pp . 292—4

4) Kubadh I was a Sassanid king who reigned at the end of the fifth century A . D .

their dykes in various places, inundating all the country round about . (5) King Abrawiz himself superintended the repair of the dykes, sparing neither men lives nor money, and yet he was still unable to master the swamps . (6)

Abu al-Feda (7) writes that the formation of al-Bataih took place during the conflict between the Sassanids and the Arabs when the former were occupied with the war that they did not repair the breaches , through which the water poured to cover the lowlands between Wasit and Basra . He added that these Bataih were supplied by water from both the Tigris and the Euphrates . (8)

The swamps, once formed, became permanent because

5) Al-Musu'di vol . 1 , P . 224 says the year 628—629 . In this year Prophet Muhammad sent 'Abdallah ibn Hudhafah al-Sahmi to Chosroes Abrawiz .

al-Baladhari , op . cit , . P . 292

6) In one day he crucified 40 dyke-men at a certain breach .

al-Masu'di , " Muruj al-Dhahab " , vol . 1 , P . 225

Ibn Rustah , " Al-A'lak al-Nafisa " , P . 96

7) op . cit . , p . 43

8) According to al-Kazwini P. 299 the region covered by al-Bataih consisted of farms and villages during the reign of the Chosroes , and any breach in the dykes was repaired " he mentioned a special breach which it seems was the largest , and they used to watch it and repair it continuously " . In the year when Chosroes was killed the Sassanids were too lazy to do this repair work and consequently the waters poured through, flooding the low-lying lands .

during the succeeding years, when the Moslems were over-running Iraq and destroying the Persian monarchy, the dykes were naturally neglected. All embankments were breached, and no one attended to their repair. Thus the great swamps, "al-Bataih", lengthened and widened. (9)

During the Omayyad dynasty part of this land was reclaimed, but in the time of al-Hajjaj, the celebrated Omayyad viceroy in Iraq, it was flooded again because he deliberately omitted to repair the breaches in order to harm the Dihkans

9) The Sassanids were too busy with the war to repair the dykes, and the Dihkants "the Persian landlords" were powerless. Thus the breaches were left without repair.

Ibn Rustah added pp. 95-96 that the former Bataih were called "Choukhi", extending on the Tigris banks between Madhar and 'Abdasi, where the Tigris used to drain its waters. After the change in the course of the Tigris, however, the source of water for "Bataih Choukhi" was lost so that they dried out and became a desert.

Today the marshlands extend to Kut and Kifl in the north, Basra in the south, the Persian frontiers in the east, and in the west the Euphrates "between Hilla and Suk al-Shiyukh" and the southern bank of Howr al-Hammar "between Suk al-Shiyukh and Basra".

According to Husted p. 49 these marshlands are what remains of an ancient lake which was left after the withdrawal of the sea, but, as we have seen, these Bataih were formed during the Sassanid era and the early years of the Islamic conquest.

Selim, M. Shakir, "Ech-Chibayish", pp. 19-27

whom he accused of collaborating with Ibn al-Ash'ath against him . (10)

The Abbasids tried their best to drain off the water and reclaim the flooded lands, but there is no mention of such an act during the Mongolian period . (11)

2 - Area : It is not easy to calculate the exact area of al-Bataih for it varied according to the seasons . Consequently geographers put on record many different measurements of length and breadth .

Ibn Rustah (12) for instance, described the swamps in his days as occupying 30 leagues (about 100 miles) in each direction, while al-Masu'di (13) gave the length and breadth as 50 leagues. When al-Makdasi (14) wrote of al-Sulaik (الصليق) he said that this was a town within al-Bataih situated on a Hawr (marsh

10) al-Baladhari, op. cit . , p. 294

According to al - Masu'di vol . 1 , p . 226 al-Hajjaj employed Hassan al-Nabti to reclaim part of al-Bataih during the reign of al-Walid the Omayyad .

11) There were some places within al-Bataih too high to be reached by the water . They were left dry to form such islands as Sartaghan, Tastakhan and 'Akr al-Said .

Ibn Rustah , op. cit . , p. 96

12) op. cit . , p. 96

13) op. cit . , vol . 1 , p. 226

14) op. cit . , p. 119

and) qofarsakhs in length . For Yakut, (15) it was sufficient to say that al-Bataih stretched between Wasit and Basra . According to al-Kazwini (16) al-Bataih were more than 30 leagues in length and breadth, while the figures of al-Nuwairi (17)) agree with those of Ibn Rustah . At all events the area covered by al-Bataih was not constant but fluctuated according to the floods, the level of the water in the rivers and the swamps itself, the heat, and the activity of the government in draining off the waters and reclaiming the lands .

(3)Description : Al-Bataih lay between Wasit and Basra.(18) At their north--western extremity they received the waters of the Euphrates, a few miles south of Kufa, (19) while below

15) " Mu'jam al-Buldan ", vol. 1 , p. 669

According to Le Strange p. 26 who summarised the ideas of Arab geographers al-Bataih covered an area 50 miles in width and very nearly 200 miles in length .

16) op . cit . , p. 299

According to Ibn Said 75 M. S. al Bataih were more than 80 farsakhs in length and breadth .

17) op . cit . , vol . 1 , p . 258

Thus the area of al Bataih was about 31,000 square kilometres, while at the present time the marshland covers about 20,000, as has been described by Selim p. 27 as the most extensive in the world.

18) Abu al Feda, op. cit . , p. 296

See the map of al Bataih and Dijla al 'Aura ,

19) Le Strange, op. cit . , p. 26

Wasit, according to Yakut, (20) the Tigris flowed out into the Great Swamps along five navigable canals .

Ibn Serapion (21) in his description of al-Bataih, mentioned five channels and four "hawrs" . He said that al-Bataih began at al-Katr with a channel overgrown with reeds . Below this lay the four "hawrs" Bahassa, Bakamsa, Basrayatha and al-Muhammadiya, each one separated from the other by a channel with an abundant growth of reeds . The fourth "hawr" the "Muhammadiya", on which stood the tower "Minarat" of Hassan, was the largest . From here a last channel with reeds led down to Abu al-Asad canal .

Abu al-Feda (22) mentioned four Bataih with channels of reeds separating them . The whole area covered by al-Bataih was dotted with towns and villages, each standing on its canal . (23) According to Ibn 'Abd al-Hak (24) there were high places not covered by water, thus enabling villages to be built and rice to be cultivated .

Navigation was difficult in those Bataih. Ibn Rustah (25) writes

20) op. cit . , vol . 2A , p. 553

21) op. cit . , p. 28

22) op. cit . , p. 43 . Perhaps he meant four Hawrs and channels separating them .

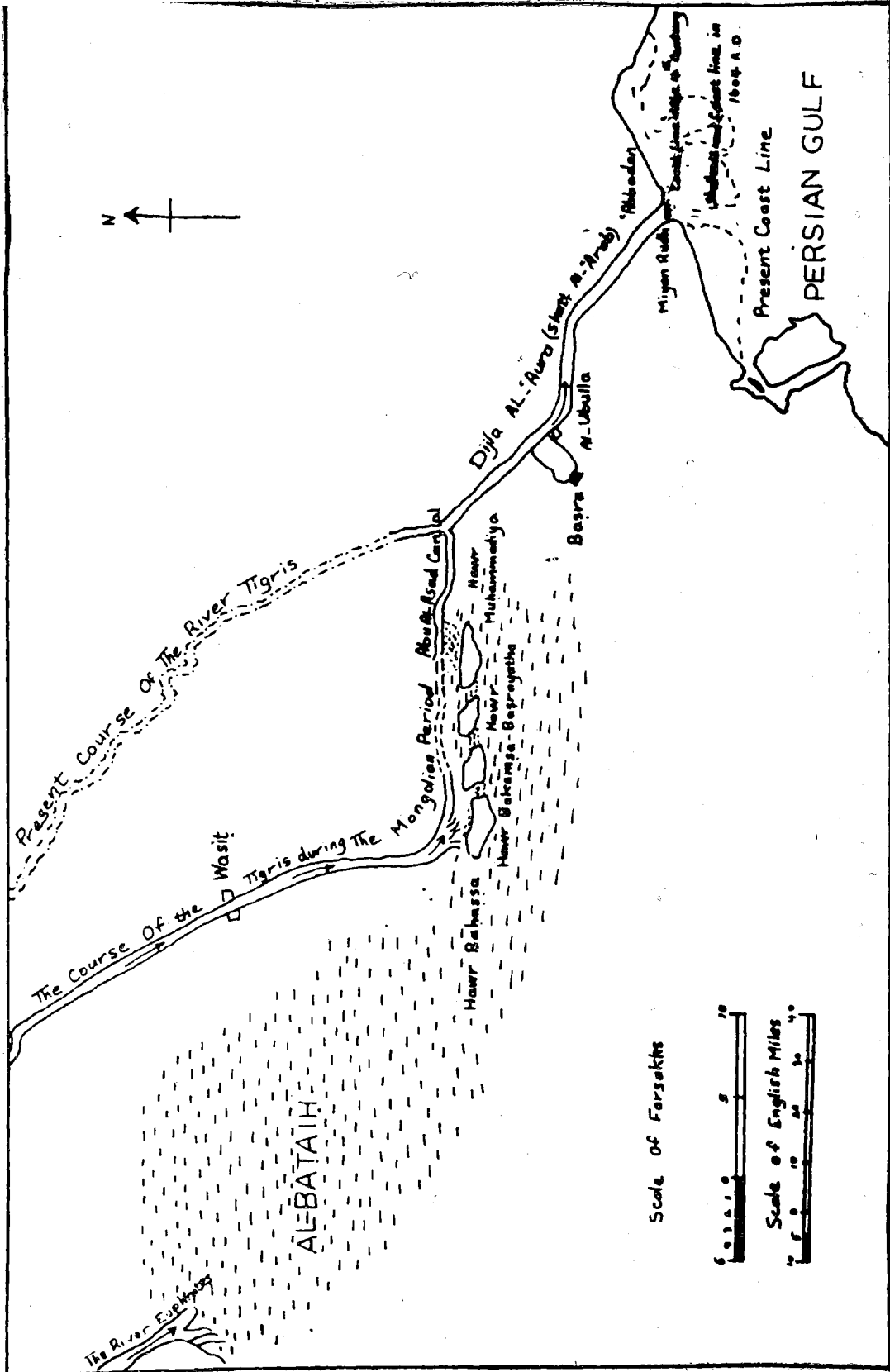
23) Abu al Feda, op. cit . , p. 296

Le Strange , op . cit . , p. 41

24) op . cit . , Tomus Secundus , pp . 161— 2

Al Hashimi , " Mufasal Jaghsafiyat al Iraq " . p . 511

25) op . cit . , p. 185



MAP. No 4

writes that the great river did not pass below Katr, but here transferred their cargoes to wherries, so light of draught as to be able to pass through the channels linking the Hawrs . Ibn Haukal (26) added that these boats were sometimes pushed by long poles called "Maradi" (مرادي poles) and al-Kazwini (27) said that boats might take a month to pass al-Bataih or possibly be stolen by thieves .

Those Bataih became the hide-out of rebels and outlaws and therefore guards were posted all along the channels to keep the course clear and to protect wayfarers . (28) In 1293 an army expedition was sent to rid the region of the outlaws .(29)

Al-Bataih were rich in various kinds of fish (such as al-Shabut) (30) which were caught and, after salting, despatched to all neighbouring provinces . (31) There were also different kinds of birds which were described by al-Kazwini (32) as birds with strange features . Al-Bashari (33) added that

26) Ibn Haukal , " al Masalik " , p. 299

Ibn Haukal, " Surat al Ard " , p . 238

27) op . cit . , p . 299

28) Ibn Rustah , op . cit . , p . 185

29) Ibn al Futi , op . cit . , p . 476

30) al-Kazwini , op . cit . , p . 299

31) Ibn Rustah, op . cit . , p . 185

Al-Hashimi, op . cit . , p . 511

32) op . cit . , p . 299

33) op . cit . , p . 119

there were dangerous gnats .

Al-Bataih drained out through Abu al-Asad canal into the estuary of Dijla al-'Aura (Shatt al-'Arab) . (34)

The point of confluence was below Matara village . (35)
Shatt al-'Arab then flowed out into the Arabian Gulf at 'Abbadan . (36) 'Abbadan (37) was situated at the coast on an

34) Ibn Rustah, op. cit. , p. 185. Nahr Abu al-Asad was described by Yakut vol . 4 B , p. 83I , as a branch of the Tigris which started at al-Madhar on the edge of al-Bataih and flowed to Matara where it joined the Great Tigris « Shatt al-'Arab » . Abu al-Asad was a slave freed by the caliph Mansur and when he was in command of troops at Basra he dug , or more probably widened , the channel to facilitate navigation .

35) Matar was described by al-Mustawfi p. 207 as a village one day's march from Basra . It was perhaps situated at the site of modern Kurna .

36) According to al-Masu'di vol . 1 , p. 216 the Arabian Gulf extended as far as Nejed and Indian and Chinese ships used to pass through it on their way to Hira « he said the kings of Hira » . This is hardly possible , because the sea withdrew southwards from this area thousands of years ago . It may be, however, that he took the wide expanse of water which linked Bahr al-Nejed and al-Bataih after the first inundation in the 5 th century A. D. to be an extension of the Arabian Gulf .

37) 'Abbadan still exists but lies more than 20 miles from the present coastline of the Arabian Gulf . Al-Makdasi p. 118 , however . 'Abbadan as having only the sea beyond it .

island which Yakut called "Miyan Rudhan" (between the rivers) . (38)

Nasir Khusrawi (39) 438 A.H. (1047 A.D.) said that, in his day, at low tide two leagues of dry land lay between 'Abbadan and the sea, while at high tide the waters reached to the walls of the town . We understand from Abu al-Feda (40) that the sea had withdrawn a small distance from 'Abbadan .

When Ibn Batutah (41) visited 'Abbadan in the 14th century it lay three miles from the sea . This means that the Delta of Iraq increased in length by about three miles in two centuries, in spite of the fact that most of the sediments were deposited into al-Bataih . (42) This increase is evidence of the

38) op. cit . , vol . 3A , p . 598 . He writes vol . 3A , p . 598 and vol . 4 , p . 700 , that as Dijlah « he meant Dijlah al - 'Aura » approached the sea near the village of al-Muhrizi - which was the port in his day - it divided into tow estuaries, the right estuary towards Bahrain and the left towards Persia , thus leaving a triangular island and 'Abbadan on the sea shore .

Ibn 'Abd al-Hak, op. cit . , Tomus Secundus , p . 129

Tomus Primus , p . 230

39) op . cit . , p . 100

40) op . cit . , p . 309

41) op. cit . , p . 118 , Arabic Edition

42) According to Sherif P. 11 , the delte increaser nowadays at the rate of 21 or 22 metres « 72 feet » a year or as Husted said P. 50 one mile a century . It was perhaps more than this in the past . It is estimated to

=

quantity of sediment brought down by the Tigris, Euphrates and al -- Karun . It is estimated to be nowadays about 25,000,000,000 cubic feet a year . (43)

Pietro Della Valle (44) and Peter Teixeira (45) stated that shallows existed at the mouth of Shatt al-'Arab making it difficult to find the entrance of the estuary . This means that the delta has been extending further south .

(b) Al-Tharthar

Another topographical aspect of the country to attract the Arab geographers was Wadi al-Tharthar, in the province of al -- Jazira . Al -- Tharthar was described by Ibn Serapion (46) as a river taking its water from the Hirmas at Sukayr al -- 'Abbas . It flowed through al -- Jazira

have been at the rate of 54 metres a year .

Wilson, " The Persian Gulf ", PP. 4, 18

According to Fisher P . 349 the increase of the delta is at the rate of one mile per 50 years .

43) The average volume of silt carried annually past Felluja by the Euphrates is 1.22 million cubic yards and that of the Tigris at 'Omara 1.54 million cubic yards. At Baghdad it is probably 2.2 million cubic yards.

Husted , op. cit . , P, 50

Arnold , op. cit . , Geog . Jour . p. 232 , March 1925

44) op. cit . , PP . 243—4

45) op. cit . , PP . 11, 14, 15

46) op. cit . , P . 12

passing by al -- Hadr and through Jabal Barima , finally it joined the Tigris south of Tekrit . Yakut added that boats had been said to pass upstream, and that many towns and buildings were situated on its course . Both Yakut(47)and Ibn'Abd al-Hak(48) said that in their day water flowed in al-Tharthar during the rainy season but in summer there was nothing more than pools of water with brackish springs here and there .

(c) Mountains

According to al-Kazwini(49)the formation of mountains depended on three factors,namely earth,water and the sun,while their height was due either to an earthquake which brought about the submergence of one piece of land and the consequent elevation of another, or the accumulation of dust carried by the winds . (50) He said that mountains could sometimes be reduced to peneplains when dryness caused them to crack and ensuing rains carried rocks and sands down to the river and sea to form layer upon layer of eroded material which eventually rose to a height equal to that of the mountains . This would account for the presence of strata of sea shells in mountains . He added that life on this earth depends on the existence of

47) op. cit . , voi . Ib , P . 921

48) op. cit . , Tomus Secundus P. 226

49) op. cit . , PP . 149--150

50) This refers to the formation of sand-dunes .

mountains, for without them, waters of the seas would cover the whole surface . At the same time they retain vapour until winter, when it falls again as rain .

According to Ibn Haukal and al-Nuwairi (51) (who quoted from Ibn Haukal) all the mountains of the world branch from the mountain (rather range of mountains) which extends from China westwards in a straight line to Sudan .

Al-'Omari (52) agreed with the above statement and added more precise details of its location . From Shiraz the main range curved to Shahrazur and Suhrud, to the Tigris and joined Jabal al-Judi . It continued its way to Amid, Miyafarikin and Aleppo where it was called Jabal al-Lukam, and then to Hims (where it was called Jabal Lebnan) . Abu al-Feda (53) described the location of the mountain range in this way : A mountain (he did not give it a name) started at zanzan $73^{\circ}40'E$. and $36^{\circ}30'N$. and went northwards to near Berda'a ($73^{\circ}E$. and $40^{\circ}30'N$.) . It then continued northwards to Teflis ($73^{\circ}E$. and $43^{\circ}N$.) . From there it turned to the south-west where it divided into ranges . One of them passed southwards to Hulwan ($72^{\circ}15'E$. and $34^{\circ}N$.) and then turned to the east to Karmisin and Dainur . The other extended from Hulwan northwards to Shahrazur and Arzn ($65^{\circ}E$. and 38°

51) op. cit . , vol . 1 , P . 210

52) op. cit . , vol . 1 , P . 60

53) op. cit . , PP . 70—71

N.) . At Arzn the mountain divided into two . One division , Jabal al--Judi , tended to the south-east as far as Jazira ibn 'Omar ($65^{\circ} 30'$ E . and $37^{\circ} 30'$ N .) . The other passed to the east of Kalikala (67° E . and 41° N .) .

Al-Jazira was described as a country with many mountains and towns . Al -Is takhri (54) said that nothing but mountains and deserts could be seen between Maxin and Sinjar (a march of three days) .

The following mountains were mentioned by the geographers :

(1) Jabal al-Judi : According to Abu al-Feda (55) this mountain extended from north to south for a distance which demanded a march of about three days . Half a day's march was needed to reach its summit . It rises above the town of Jazira ibn 'Omar . Al-Kazwini (56) added that Noah's Ark came to rest there . He asserted that down to the Abbasid times pieces of the Ark could be seen . On the summit (57) of the mountain , Noah built a holy place (temple) which was visited by the people .

(2) Jabal al-Silk (Lahijan) : was known , according to

54) op. cit. , p. 41

H. A. H. p. 124

55) op. cit. , p. 69

56) op. cit. , pp. 156-7

57) According to Ainsworth p. 266 Jabal Judi consists of two lofty ranges , the more northern one of which advances upon the Tigris to the north of Jazira ibn 'Omar .

Ibn 'Abd al-Hak as Silk Bani al-Hasan (58) was a high mountain range overlooking the river Zab and linked with Shahrazur .

(3) Jabal She'ran^o was a mountain range near Shahrazur (59) As it neared Khanikin it divided in to two branches , Zalm and Tamarra . According to al-Hamadhani (60) it was also called Jabal Kandil , but it was known as Sha'ran because of the abundance of trees which grew there . There were pear trees , besides grapes and huge trees which were cut and carried to Iraq .The snow remained on peaks all through the year .

(4) Jabal Barimma (61) : was otherwise called Jabal Himrin, or Shatidma , both names alluding to the red colour of its soil . (62) Barimma stretched between Tekrit and

58) op. cit. , Tomus Primus , pp. 44—45

59) Ibn 'Abd al-Hak, op. cit. , Tomus Primus, P. 136

60) op. cit. , pp. 131—132

De Goeje , op. cit. , p. 30

61) This range stands to the east of Mandeli and stretches as far as the Tigris at al-Fatha, in a south-east/north-west direction. Its continuation on the other side of the Tigris is called Jabal Makhul . The range appears as a series of hills , about 160 km . in length .

Sherif , op. cit. , pp. 74—75

62) Himrin is taken from Ahmar " " red " in Arabic " , and Shatidma means " blood drinker " .

Mosul . (63) According to Yakut (64) and Ibn 'Abd al-Hak , (65) this mountain range encircled the whole world . Both added that in the centre of al-Jazira it extended to the east as far as Kirman and Masabadhan and to the west . (66) The Tigris cut its way near al-Sinn , (67) and both al-'Adeim and Diyala cut their way through at other points . This range forms a barrier between the semi-mountainous region and the alluvial plain . (68) It is of great economic interest , in that dams could be constructed at the points where the rivers flowed through . An instance of this was the Abbasid dam of Band al-'Adeim .

63) Yakut , op. cit . , vol . 1 , p. 464

Idn 'Abd al-Hak , op. cit . , Tomus Secundus pp. 117—118

Both Yakut and Ibn 'Abd al-Hak were wrong , because this range does not extend as far as Tekrit and Mosul .

64) op. cit . , vol . 1 , p. 464

65) op. cit . , Tomus Secundus , pp. 117—118

66) al-Kazwini p . 170 , thought that Jabal Kaf encircled the earth and every mountain had a root linked with Kaf . Thus if God wanted to destroy a village , He would order the Angel responsible for the mountains to pull the root in the place where He wanted to punish the people , thus causing the area to sink down !!

67) al-Istakhri , op. cit . , p. 42

Yakut , op. cit . , vol . 1 , p. 464

Ibn 'Abd al-Hak , op. cit . , Tomus Secundus , pp. 117—118

68) Husted , op. cit . , p. 33

(5) Jabal Sanam : is a high mountain , six or seven leagues (69) to the south-west of Basra , (70) possibly two leagues in length . It has much water which , according to Ibn 'Abd al-Hak , (71) was muddy , due to the dust carried by the winds . This water was used by the caravans going to Mecca . (72)

(6) Jabal Sinjar : Jabal Sinjar is to the north of the town of Sinjar in the province of al-Jazira . This was described by Abu al-Feda (73) as the most fertile mountain , Ibn Said added that Sumach , almonds , olives , pomegranates and various sorts of fruits were cultivated abundantly . (74)

69) al-Istakhri , op. cit . , p. 42

Yakut , op. cit . , vol . 1 , p. 464

Ibid , p. 33

70) Peter Teixeira , op. cit . , p. 20 . It is about 300 feet above sea level . Abu al-Feda , op. cit . , p. 309

71) op. cit . , Tomus Primus , PP. 55—56

Peter Teixeira , op. cit . , P. 20

72) Ibn 'Abd al-Hak , op. cit . , Tomus Primus , PP. 55—56

Peter Teixeira , op. cit . , P. 20

73) op. cit . , P. 283

Ibn Batutah , op. cit . , vol . 1 , P. 150 , Arabic Edition .
al-Kalkashandi , op. cit . , vol . 4 , P. 322

74) " The Geography of Ibn Said " , P. 72 M. S.

Jebel Sinjar is an enormous arc with steep slopes , and attains a maximum elevation of 1,600 metres with the peak of Chil Miran . It is 50 miles long and between 5 and 8 miles wide . The continuation of this arc is Jabal 'Abdul 'Aziz , a volcanic mass in Syria .

Atroushi , op. cit . . P. 4 .

al-Darkazli , op. cit . , P. 98

(d) Deserts

The references to deserts by the Mongol geographers are very scanty for they were only mentioned in connection with other things related to them . Deserts were called by several names . (75) Yakut (76) and Ibn 'Abd al-Hak (77) mentioned the desert to the west of the Euphrates by the name of Samawat . It extended between Kufa and al-Sham (Syria) . It was called Samawat because it was a level tract of country without rocks and water . Abu al-Feda (78) divides this desert into two parts , the one between 'Abbadan and Anbar , lying within "Badiyat al-'Iraq", and the other between Anbar and Balis within "Badiyat al-Jazira" . .

To the east of the Tigris (on the Persian side) Yakut (79) mentioned another Bariya which was formed , according to him , after the destruction of al-Nahrawan canal . To the north of this Bariya , five leagues south of Dakuk , al -Mus-tawfi (80) mentioned a place with moving (or quick) sands,

75) Abu al-Feda P . 80 , gave the name as Badiya " plural Bawadi " while al-Andalusi vol . 3 , P . 760, Yakut vol. 2 B, P . 676 and others mentioned al-Bariya " plural Barari " .

76) op. cit . , vol . 3 , P . 131

77) op. cit . , Tomus Primus , P . 49

78) op. cit . , P . 80

79) op. cit . , vol . 2 B , P . 676

80) op. cit . , P . 220

where a man could be sucked down so that the sand rose above his head and he perished . On account of this , sign-posts and marks have been set up along the way to prevent travellers from passing through this area and suffering the awful consequences . In addition to these Bawadi and Barari , al-Bariri of al-Jazira were mentioned by the geographers . (81)

3 -- Climate

The geographers of the Mongolian period were almost entirely agreed that the country lay in the third and the fourth "climes" . (82) According to al-Nuwairi (83) and al-Kazwini (84) the third "Iklim" (85) lay between $27^{\circ} 30' N$.

81) Ibn Haukal , " al-Masalik " , P . 155

82) The word "clime" means the zones of latitude .

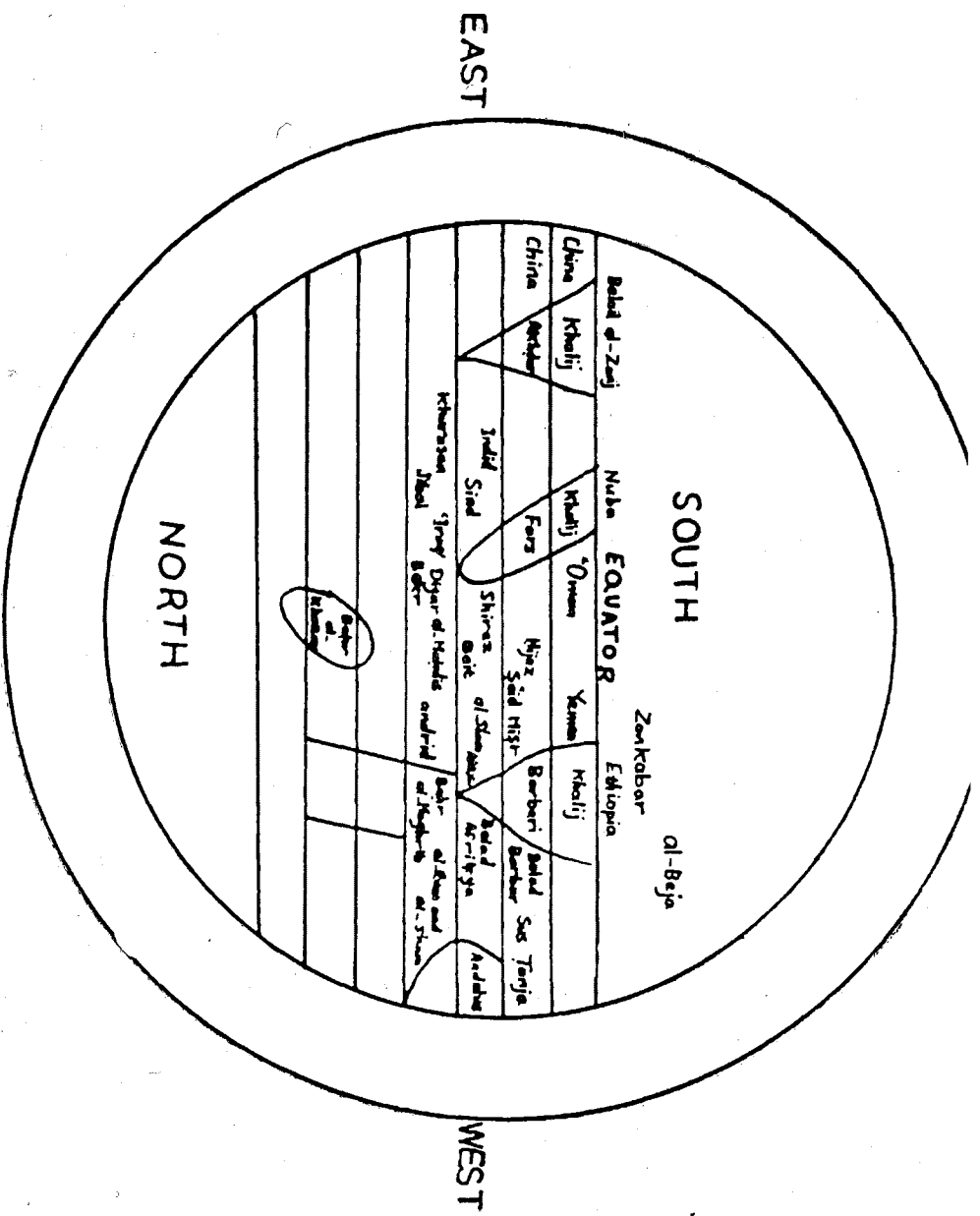
83) op. cit . , voi . 1 , PP . 202, 203, 207, 211

84) op. cit . , PP . 92, 188

85) "Iklim" is the Arabic term for clime .

Both al-Nuwairi vol. 1 , P . 209 , and al-Kazwini P . 147 divided the habitable world into seven climes . According to al-Kazwini PP , 147 - 8 , the habitable quarter was divided into seven sections like a carpet each called "Iklim" . These climes differed in length and breadth . The largest one was the first clime . Its length from east to west was about 3,000 farsakhs and its width from south to north 150 farsakhs . The smallest "Iklim" was the seventh , 1,500 farsakhs in length and 70 farsakhs in width . He added that these were imaginary divisions organized by such ancient kings as "Faridun al-Nabti" , "Iskandar al-Rumi" and Ardashir Babik al Farisi , who perambulated the habitable quarter . A farsakh « league » is three miles .

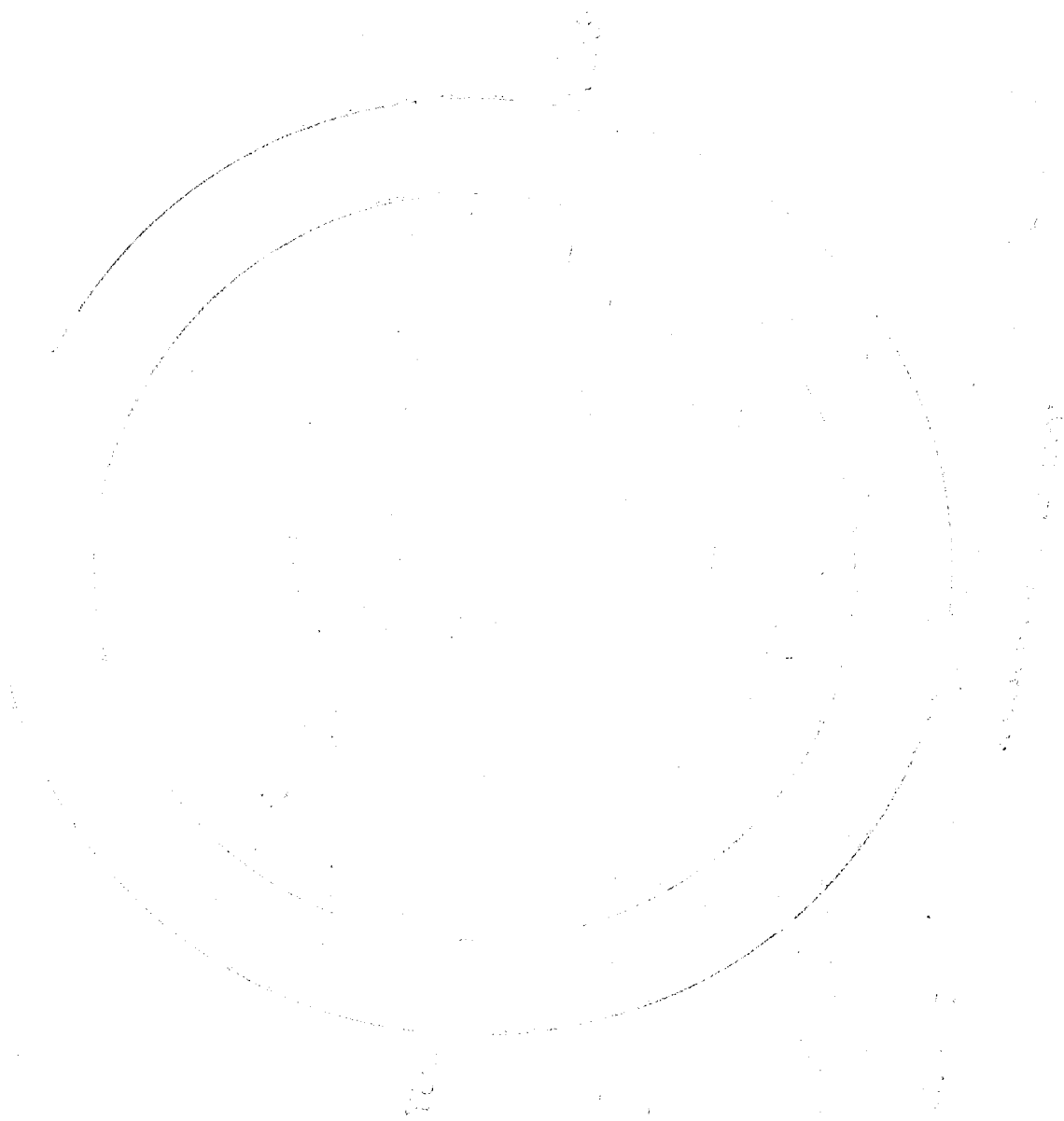
See the map of the Seven Climes .



THE SEVEN CLIMES

MAP No. 5

(After al-Kazwini)



and $33^{\circ} 49' N$. Its longest day at its southern edge was $13 \frac{3}{4}$ hours, in the centre 14 hours and at its northern edge $14 \frac{1}{4}$ hours. The fourth "Iklim" lay between $33^{\circ} 49' N$, and $39^{\circ} 20' N$. The longest day was $14 \frac{1}{4}$ hours at its southern edge, $14 \frac{1}{2}$ hours in the centre and $14 \frac{3}{4}$ at its northern edge. They concluded that the location of the country in the centre of the world (i.e. habitable world) (86) gave her a number of advantages. It spared her the heat of the first and the second Iklim and the cold of the sixth and the seventh. (87)

86) Ibn al-Jawzi, "Manakib Baghdad", p. 4

al-Ya'kubi, op. cit., p. 234

al-Masudi, "al-Tanbih...", p. 35

al-Kazwini, op. cit., pp. 5, 6

87) According to Ptolemy pp. 121 - 125, the region which we inhabit is one of the northern quarters. The people who live in the more southerly latitudes, that is, those from the equator to the summer tropic, have the sun over their heads and are burned by it. They have black skins and thick woolly hair, are contracted in form and shrunken in stature "perhaps he described the pygmies", are sanguine by nature and in habits are, for the most part, savage. Those who live in more northerly latitudes with the "Bears" over their heads are far removed from the Zodiac and the heat of the sun and are therefore cold tempered. Because they have a richer share of moisture, however, which is most nourishing and is not evaporated by the heat, they are white in complexion, straight-haired, tall, well nourished and somewhat cold by nature. They, too, are savage in their habits because their dwelling places are continually cold. The inhabitants of the region

In consequence the winds were moderate , the water and the temperature healthy . Her inhabitants had healthy minds , better ideas , more controlled passions , nice customs and proficiency in all kinds of industries .

In addition they had brown skins , neither dark like the Negroes and the Ethiopians nor fair like the Scythians .

Her inhabitants were spared the winters of al-Jibal , the summers of 'Oman , the thunderbolts of Tihamah , the abscesses of al-Jazira , the mange of the Negroes , the plagues of Syria , the spleen (88) of al-Bahrain , the fever of Khaibar , the earthquakes of Siraf , the snakes of Sijistan and Egypt , the scorpions of Nasibin , the changeable , dry winds of Egypt , the harshness of the Turks , the roughness of the Kurds and the ugliness of the Chinese . (89)

between the summer tropic and the " Bears " , however , since the sun is neither directly over their heads nor too far distant at its noon-day transit , share the moderate temperature of the air , which varies , but with no violent changes from heat to cold . They are therefore medium in colour , of moderate stature , in nature equable , live close together and are civilized in their habits . The southernmost of them " the Egyptians and the Chaldeans " are in general more shrewd and inventive , and better versed in knowledge of things divine . They are characterised by an activity of the soul which is investigable and fitted for pursuing the sciences specifically called mathematical .

88) A diseased spleen

89) Yakut , op . cit . , vol . 3 , p . 63

al-Masudi , op . cit . , p . 35

al-Farisi Yazdajrid , op . cit . , p . 323

Ibn al-Jawzi , " Manakib Baghdad " , p . 4

In addition to these generalisations which are the main features of the geography of the ancient world, they spoke more or less scientifically about the climate of the country and gave us some useful details about heat, winds, rain, hail and snow and also mentioned the type of climate which Iraq and al-Jazira enjoyed.

(a) We conclude from the Mongol geographers, the European traders who happened to visit the country and write about it, and the early Arab geographers, that the principal characteristics of the climate were as follows:

(1) Wide ranges of both annual and diurnal temperatures

Characteristic of the climate were the very hot summer and the very cold winters. (90) For instance, the climate of Mosul was described by al-Kazwini (91) as being hot as hell in summer and bitterly cold in winter. (92) At the same time

90) al-Ya'kubi, op. cit., p. 234

al-Bashri, op. cit., pp. 135-6

Benjamin states that there was a "Maristan" "hospital" for the mad people who were sick in mind as a result of the severe heat of summer. op. cit., p. 135 Arabic translation.

91) op. cit., p. 309

92) According to Yakut the main fault in Mosul was the excessive heat in summer and the severe cold in winter. op. cit., vol. 4, P. 684

there was a wide diurnal range of temperature . (93)

(2) A well-defined seasonal rhythm

The situation of the country contributed to the existence of the four seasons . The geographers who wrote about the climate of both Iraq and al-Jazira mentioned the succession of the four seasons . (94)

(3) Paucity of rain and clouds

The country was described as being without rain for eight months on end , with practically no clouds in the sky by

93) The four seasons were :

a - Spring, from 21st March until 23rd June which is hot and damp . Duration : 93 days , 23 hours , 6 minutes .

b - Summer . from 24th June until 24th September , which is hot and dry . It lasts for 92 days , 23 hours , 20 minutes .

c - Autumn , from 25th September until 22nd December , which is cold and dry , Duration , 88 days , 17 hours , 4 minutes .

d - Winter , from 23 rd December until 20 th March , which is cold and damp . Duration 89 days , 14 hours .

al-Mas'udi , op. cit . , PP . 14 - 15

al-Kazwini , op. cit . , PP . 85 - 86

94) For example , when al-Kazwini was describing the climate of Mosul , he said " Mosul has a nice spring , severely hot summer , feverish autumn and bitter winter " . op. cit . . P , 309

al-Mas'udi , op. cit . , P . 35

al-Ya'kubi , op. cit . , P . 234

day or night . (95)

(4) High relative humidity

Relative humidity was high in Southern Iraq due to the cultivation of palm trees and the extension of al-Bataih . (96)

These general characteristics were determined by the situation of the country in the centre of the habitable world where the sun was not vertically over it . (97)

After this reference to the general characteristics of the climate of the country it is necessary now to discuss the major elements .

(b) Heat

Writers agreed that the climate was generally hot and dry, but damp in Southern Iraq . According to Peter Teixeira (98)

95) Hakluyt , op. cit . , vol . VI , P . 6

“ The average daily amount of sunshine in July is 14 hours and 4 minutes , three hours and 48 minutes greater than that for January , which is 10 hours and 16 minutes . ”

Shalash , op. cit . , PP . 6 - 7

96) Al-Mustawfi described the climate of Wasit P . 53 as of the third clime , somewhat damp on account of its plam-groves .

97) al-Mas'udi , op. cit . , P . 35

al-Kazwini , op. cit . , PP . 5, 6

98) op. cit . , P . 41

the summers and winters were as in Europe , (99) with the difference that the heat was excessive and the cold moderate . In summer people sleep on the roofs .

(c) Winds (100)

Several prevailing winds were said to blow on the country. These were the north winds (al - shamal) , the south winds , and al-Bawarih “ ” .

(1) The north winds (al-shamal) were the prevailing winds of the country , (101) especially in the winter , as al-Kazwini said . (102) These winds were dry cold and in winter the Arabs abhorred them because they brought cold and dry

99) He apparently meant the Mediterranean type of climate to which he belongs .

100) al-Kazwini spoke pp. 95-96 of the origin of winds . al-Shamal “ north wind ” is a cold dry wind from cold frozen origins “ in the north ”

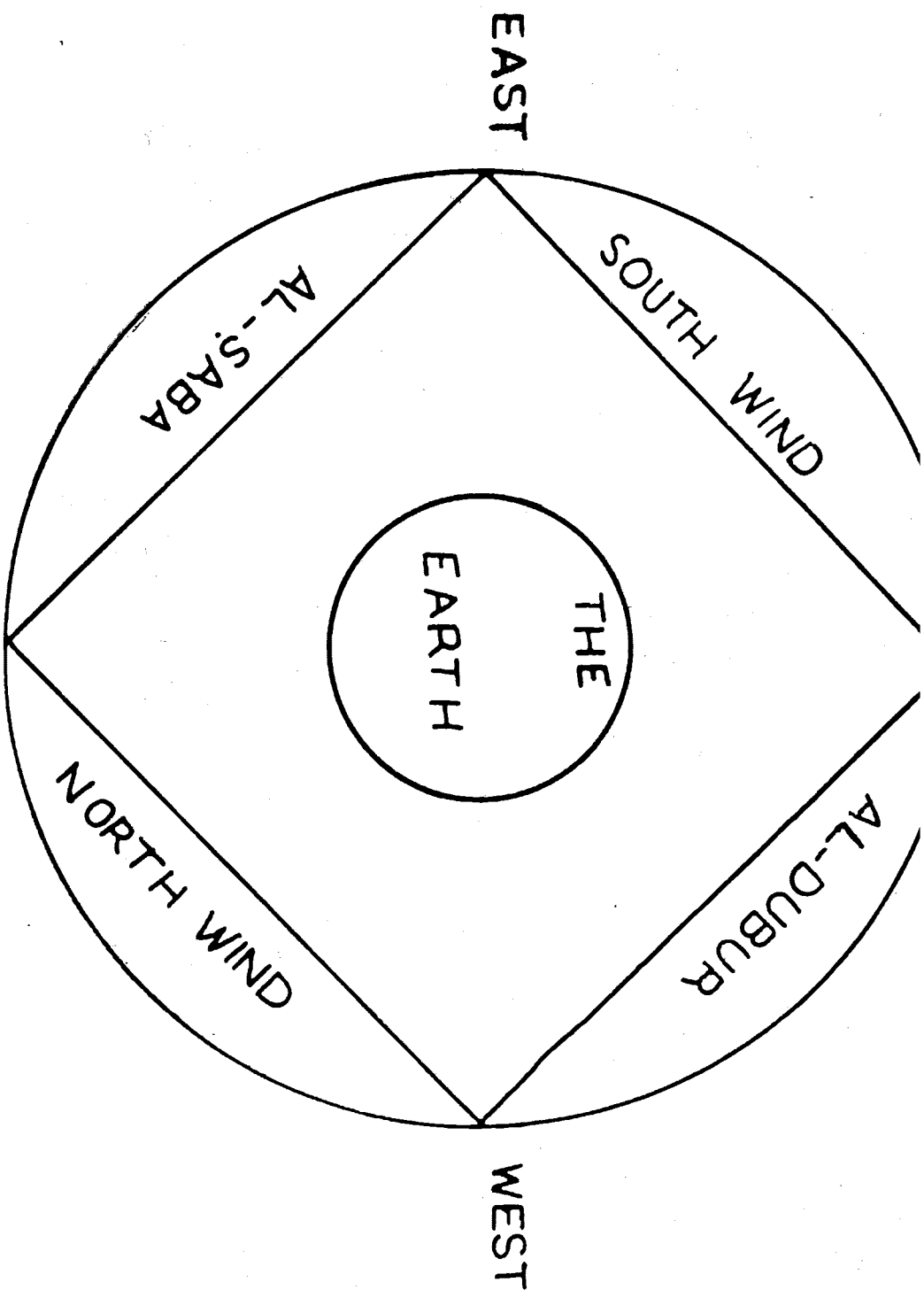
Al-Janub “ south wind ” is hot and damp because it blows from the equator .

Al-Saba is a moderate wind , while al-Dubur is cold and blows very infrequently .

See the map of winds .

101) al-Mustawfi , op. cit . , P . 3

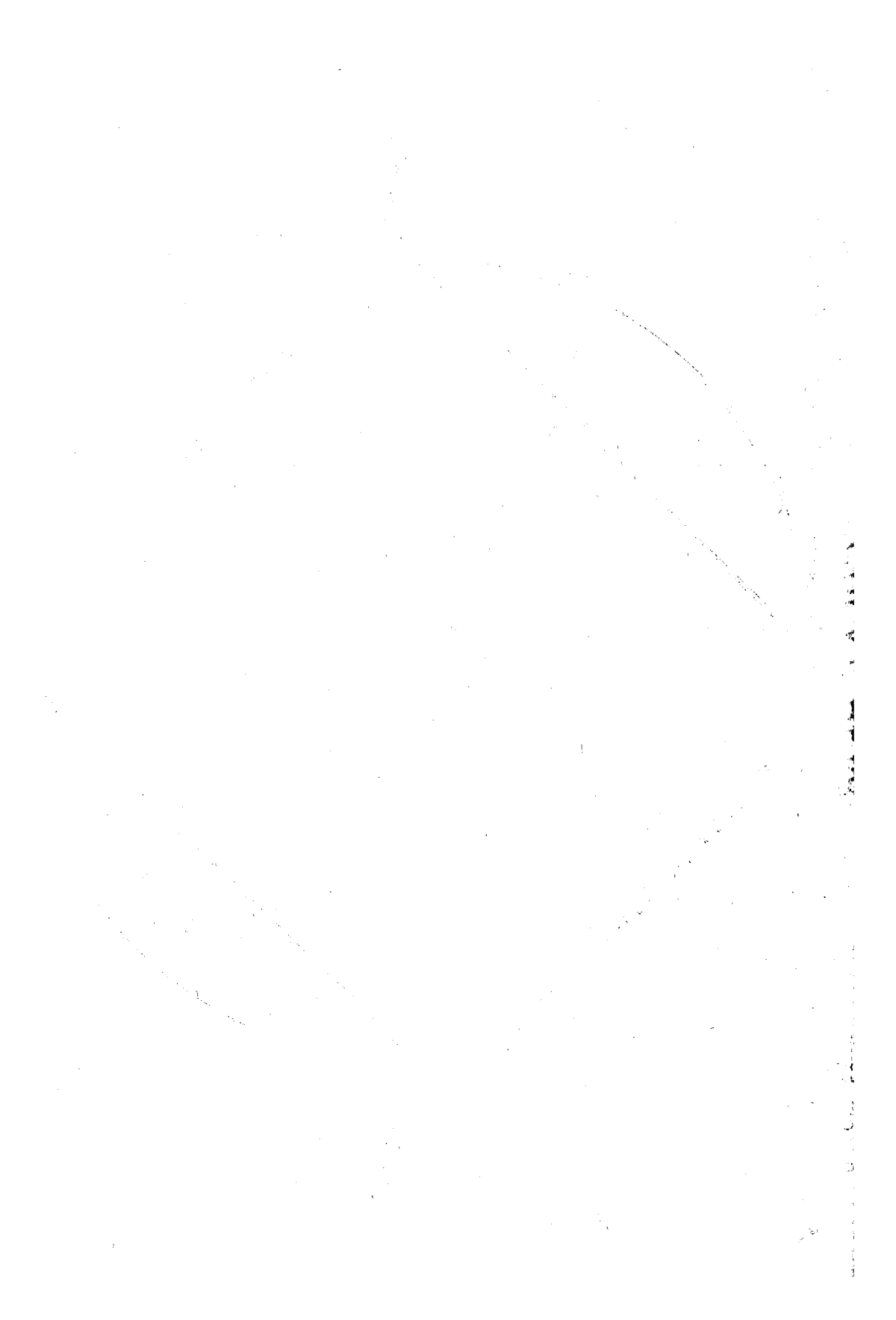
102) op. cit . , P . 96



GREAT BEAR

MAP No. 6

C. Adams and J. K. Robinson, N. Y. 1888



weather . (103) According to al-Bashari (104) al-shamal always gave relief and welcome cool weather during the summer. Al-shamal hindered navigation upstream in the Tigris , Euphrates and Shatt al-'Arab . (105)

(2) The south winds : They were so called because they were believed to come from beyond Wasit and Basra , and according to al-Mas'udi (106) they caused the agitation of the Tigris and increased clouds and rain . Al-Bashari (107) added that the south winds were penetrating winds and tightened the chest . The Arabs prized the south winds because they carried vapour which caused rain . (108)

103 al-Mas'udi p. 19 , said that al-shamal blew from north of A'mal al-Mosul .

al-Shamal is a north-westerly wind blowing down from the mountain regions and plateaux of Armenia and Anatolia , to the lowlands of the Tigris and the Euphrates valleys in short and dry gusts. It becomes the predominant local wind over the country from February to October, being practically intense and strong from June to August . Seventy - five per cent of the winds blowing in Iraq are al-Shamal .

Shalash , op . cit . , p , 16

Atroushi , pp. 125 , 158

104 op. cit . , P. 125

105 Peter Teixeira , op. cit . , pp . 10, 11

106 op. cit . , P. 19

107 op. cit . , pp. 125, 138

108 al-Kazwini , op. cit . , P. 96

This wind blew during the summer season and was called "al-Bawarih " or "al-sumum" . It started blowing in "Huza-iran" (June) and continued for 40 days . If it blew continuously it caused pestilence as did the Marisiya of Egypt . (109) Al-Siyuti (110) informed us that this wind blew once for 50 days , thus destroying the crops of Basra , Kufa and Baghdad. Its effects were felt as far as Mosul and Sinjar . (111)

(d) Precipitation

Iraq and al-Jazira were considered to have enough rain for cultivation . The rainy season started in "Tishrin awal" (October) and ended in spring . (112) During October and November the farmers could expect rain for the winter seeds (wheat and barley) . Sometimes the rain was not sufficient for cultivation and therefore famines were caused .

Sometimes snow fell . According to Ibn al-Futi (113) "Wafir" (snow) fell in Baghdad in 1268 to the depth of about a span (about nine inches) . In addition snow was

109) al-Mas'udi, op. cit. , P. 96

110) op. cit. , , P. 353

111) This description of the south winds is quite perfect . It is now locally called " al-Sharki " or al-Sharkiya . It has the same effect as al-Khamasin of Egypt or al-Siroko .

112) Ibn al-Jawzi , " al-Muntadam " , vol . 10, P. 120

Ibn al-Athir, op. cit. , vol . XI , P. 270

113) op. cit. , P. 362

every year expected to fall in the mountains . Abu al-Feda (114) said that snow fell every year on Jabal Hulwan :

According to al-Kazwini this phenomenon was caused by "the freezing of the vapour in the clouds ." (115) Sometimes hail would fall causing comprehensive damage to cultivation , and sometimes killing animals . In April 1287 hail fell on Baghdad and destroyed the crops of its dependencies . (116) The hail was formed by the freezing of the drope of rain in the sky on their way down . (117)

4 -- Mineral Wealth

The ideas of the Mongol georaphers concerning the formation of minerals are very naive but interesting . According to al-Kazwini (118) gold was formed in the sandy deserts and Slacken mountains (جبال رخوة) while silver , iron , lead and brass (copper) were formed only in lands where stones mixed with soft soil were to be found . Sulphur was formed in igneo-

114 op. cit . , P. 307

115 op. cit . , P. 94

116 Ibn al-Futi , op. cit . , P. 453

Ibn al-Futi informed us P. 226., that in the year 1246 huge hail stones fell, weighing three pounds, and killed many animals, sheep and birds . Sometimes hail stones were as heavy as nine punds .

Ibn al-Jawzi , " Miraat al-Zaman " , vol . 8 , part 1 , P. 232

117 al-Kazwini , op. cit . , P. 94

118 op. cit . , P. 6

us lands , mercury in lands with more water (Aradi Maiya (أراضي مائية) , salt in the salt lands (أراضي سبخة) and naptha and bitumen in oily lands (أراضي دهنة) .

The country was always short of useful metals and for these it depended either on Persia and other countries within the Mongolian empire or on imports from outside .

The shortage was partly compensated by a variety of minerals which were of special importance .

(1) Iron Ore : The only two mines mentioned by name were Hani and Harur . Hani was in al-Jazira province to the north of Amid , (119) and Harur was 30 leagues to the north of Mosul . (120) Both were celebrated for their iron mines .

(2) Bitumen : (Kuir قير) either flowed from some mountains or from hot-water springs . It stayed soft in water , but as soon as it was taken out of the water it became cold and dry . The people used to put it in an oven a fire , mix it with a special amount of sand and stir it for some time . They then used it to pitch ships , boats and baths . (121) Many active bitumen springs were mentioned by the Mongolian geographers .

(a) Hit , on the Euphrates two days' journey from "Ba-

119 al-Mustawfi , op. cit . , P. 54

120 Yakut, op. cit . , vol . 4 , P. 970

121 al-Kazwini , op. cit . , P . 244

bylon" . (122) The plain nearby was covered with the pitch , this pitch was ejected into the air from a hole in the earth accompanied by a large amount of smoke . (123) It fell in drops over the whole plain . Al - Mustawfi (124) added that it was almost impossible to live in Hit on account of the evil smell of the bitumen spring . This spring sounded like a blacksmith's forge , as it puffed and blew both night and day . This noise could be heard a mile off. The people of the country called it "Bab Jahanam" (Hell's door) . (125) It was used to pitch boats and baths .

(b) Kayara is to the south of Mosul . It was , and still is , famous for its bitumen springs . According to Ibn Batutah , (126) who passed through Kayara on his journey and described these springs , the bitumen was taken to the neighbouring towns . Al-'Omari (127) added that these springs brought in a large revenue to the Sultan .

122 The European travellers and merchants used this name for Baghdad .

123 Kerr, Robert , op. cit . , vol . VII , P . 147

Peter Teixeira , op. cit . , P . 83

Hakluyt , op. cit . , vol . V . , P . 467

Abu al-Feda , op. cit . , pp . 298 - 9

124 op. cit . , P . 53

125 Hakluyt , op. cit . , vol . VI , P . 8

126 op. cit . , vol . 1 , P . 175 Arabic Edition .

vol . 1 , P . 148 , another Arabic Edition .

127 op. cit . , P . 301

(c) A spring between Kufa and Basra : This spring furnished Baghdad with bitumen for baths . Ibn Batutah said that these springs flowed constantly . (128)

(d) Two other springs were mentioned by al -- Mustawfi (129) and Yakut . (130) One of them was near Mosul , and the other on the point where the Tigris cut its way through Jabal Barisima .

(3) Naphtha (131) : Naphtha floated on the waters . Some of it was black and some white . By a simple chemical reaction in a retort, black naphtha could be changed to white . (132) Several springs were mentioned by the Mongol and early geographers :

(a) Khanikin : According to Yakut (133) and Ibn 'Abd al - Hak (134) there was near Khanikin a naphtha spring

128) op. cit . , P. 166 , Arabic Edition .

129) op. cit . , P. 198

130) op. cit . , vol . 1 , P. 464

131 Naphtha was mentioned in the country a long time ago . According to Pliny : Naphtha was a name of a substance that flowed out in the neighbourhood of Babylon . Marco Polo added P. 26 that it was used as an unguent for the cure of cutaneous distampers in men and cattle as well as other complaints , and it was also good for burning . op. cit . , vol . 2 , P. 361

132 al-Kazwini, op. cit . , P. 244

133 op. cit . , vol . 2A , P. 393

134 op. cit . , Tomus Secundus , P. 336

It was used for skin diseases

which brought in a large revenue .

(b) Other springs mentioned by the Mongol geographers were : one near Hit , (135) one in the Mosul district , a third in the country between Bayat and Bandanijin (136) and a fourth in Kayara . (137)

(4) Mumia “ **موميا** ” : Another mineral , mentioned by al -- Kazwini (138) as being similar to bitumen but more valuable and more useful , was found in Mosul . Yakut (139) stated that the mineral of Mumia was to be found in Harur .

(5) Salt : Salt was obtained from various places , and the government , during the Abbasid era , imposed a tax on the salt mines . (140) White salt was brought from a mine two days' march to the north of 'Anah and distributed to all Mesopotamia . (141) It was also brought from al-Nejef , (142) and from various places in the province of al-Jazira . (143)

(6) Sulphuric springs : Many sulphuric springs , both

135) Abu al-Feda, op. cit. , P. 299

136) al-Mustawfi , op. cit. . P. 199

137) al-'Omari , op. cit. , P. 301

138) op. cit. , P. 244

139) op. cit. , vol. 4, P. 970

140) Zaidan , op. cit. , vol. 2, P. 74

141) Peter Teixeira, op. cit. , P. 52. This mine still exists and the natives of 'Anah used to take their salt which as they described it was very clean from this place .

142) Pater Teixeira , op. cit. , P. 27

143) Ibo Haukal, op. cit. , P. 155

cold and hot , were mentioned by different geographers .
People used to bathe in these springs to cure skin diseases .
They occurred in the following places :

(a) Hulwan . (144)

(b) Hamam 'Ali (25 kilometres to the south of Mosul . (145)

(c) Shafatha . (146) In addition to these Ibn 'Abd al-Hak
stated that there were several sulphuric minerals at al-Dair
al-A'la near al-Mosul , which brought a good income to the
Sultan . (147)

Moreover , Ibn Haukal (148) mentioned that the mineral
which was used for the glass industry (sand) was plentiful
at Jabal Mardin and was taken to al-Jazira and Iraq . Peter
Teixeira (149) mentioned some kinds of building stones

144 There were several sulphuric springs round Hulwan ,
Yakut, op. cit. , vol. 2A, P. 317

145 There was a hot sulphuric spring there , which is still
visited by people from different parts of Iraq .

Yakut , op. cit. , vol. 2A, P. 329

146 Benjamin , op. cit. , P. 145

147 op. cit. , Tomus Secundus, P. 423-4

148 op. cit. , P. 143

149) op. cit. , PP. 37-38 & 51

He described the houses of 'Anah as being built of stones
and plaster of lime, stone and clay . In the same work he described
stones that were used for building in Baghdad as white and very
hard but not marble , They were brought from Mosul ,

which were used both in 'Anah and Baghdad. (150) Ibn 'Abd al-Hak (151) mentioned huge millstones which were cut from around Basuma (to the north of Mosul) and exported elsewhere. In addition lime (نـورـة) and borax (بـورق) were to be found at Hit and Haditha. (152) When Ibn Khalikan menteioned Haditha he called it "Hadithat al-Nura" (Haditha of the Lime) . (153)

6 — Conclusion

We see from their works that the Mongol and early Arab geographers had definite ideas about the origin of mountains and the existence in some of them of shelly strata . They excelled in descriptive geography .

What has been written about al-Bataih and their origin refutes the theory that the marshlands of Southern Iraq are the interior lake which was left after the withdrawal of the Arabian Gulf .

The geographers of the Mongolian era gave a clear picture of the prevailing winds of Iraq (al-shamal) and the rain-bearing winds (al-Janub) . Their observations have been

150) Fraser P. 231, mentioned marble taken from the neighbouring hills of Mosul and used for door and window plates .

151) op. cit . , Tomus Secundus , P. 154

152 Hilmi, Ibrahim, op. cit . , PP. 349—350
M. L. Al-'Arab M. 1911

153 op. cit . , vol. 2 , P. 283

borne out by present-day knowledge .

Their account of the formation of hail and snow is quite correct .

With reference to minerals , the sulphuric springs and all the bitumen and naphtha springs still exist, with the exception of the one between Basra and Kufa .

CHAPTER - 3

1821

Al-Rafidain (The Twin Rivers of Mesopotamia)

1 — Introduction

2 — The Tigris

Geographical descriptions of

(a) The pre-Mongolian period

(b) The Mongolian period

3 — The Euphrates

Geographical descriptions of

(a) The pre-Mongolian period

(b) The Mongolian era

4 — Conclusion

Al-Rafidain (1) (The Twin Rivers of Mesopotamia)

1 — Introduction

The geographers , historians and travellers of different nationalities and of both the ancient and mediaeval world were interested in describing the sources , courses and affluents of the twin rivers of Iraq .

The works of writers such as Pliny , Herodotus , Ptolemy and Strabo were all translated into Arabic for the use of scholars and travellers . (2) The Arab scholars corrected some of the old errors contained in these ancient works and sometimes added comments of their own .

A point worth mentioning here is that the sources , courses and affluents of both rivers were known to most of the geographers and affluents of both rivers known to most of the geog-

1) Al-Rafidain means " gift " .

2) The great translation bureau " Bait al-Hikma " was established during the reign of Harun al-Rashid , where learned translators of different nationalities , i . e . Hindus , Parsis , Christians , Jews and Moslems , were employed . Books were collected from all countries regardless of cost and the translators were paid the weight of the books in gold .

Nafis Ahmad , " Muslim Contribution to Geography " , p . 5

Kimble , " Geography in the Middle Ages " , p . 45

raphers , since Iraq , Persia and Turkey were known to the earlier geographers and later on Iraq , Persia and most of Turkey were conquered by the Arabs and then by the Mongols, and were naturally visited by merchants , travellers and geographers , who reported what they saw .

2 — The Tigris (3)

(a) The Tigris according to the geographers of the pre-Mongolian period

A survey of pre - Mongolian accounts is called for in order to establish the change which took place in the course of the Tigris during the Mongolian period , and in order to see how much the writers of the Mongolian era derived from the earlier Arab geographers ' who in their turn depended on or quoted from Ptolemy's description of the river .

Al - Khwarizmi acknowledges his Kitab "Surat al-Ard" to be a quotation from the geographical work of Ptolemy .

According to al-Khwarizmi , the source of the Tigris was a spring at longitude $64^{\circ} 40'$ and latitude 33° سدم ط ٥

3) " Tigris " is the Median word for " arrow ", describing the Tigris' extremely swift current . It was also called " Nahr al-Salam " « the River of Peace » , or al-Zawra , which is a descriptive name describing the meanders of the Tigris near Baghdad .

39° 5'. (4) The river passed between two mountains at longitude $64^{\circ} 45'$ and latitude $37^{\circ} 45'$, (5) and flowed parallel to the mountain to longitude $68^{\circ} 5'$ and latitude $38^{\circ} 30'$. Then it passed by the following towns : Amid , Mosul , Tekrit , Samarra and through Baghdad. Below Baghdad the Tigris flowed by al -Madain , through Wasit to al - Bataih (marshlands) at longitude $73^{\circ} 5'$ and latitude $31^{\circ} 45'$. Finally it divided into three branches , the first flowing to Basra , the second between Basra , 'Abbadan and al- Ahwaz , and the third into the sea at longitude $74^{\circ} 45'$ and latitude $30^{\circ} 30'$. (6)

4) Perhaps this is the lake mentioned by Pliny .

Pliny, " Natural History ", vol. VI, p. 435.

About the Arabic letter longitudes and how they are deciphered, see Appendix I .

5) To compare the work of al-Khwarizmi with Ibn Serapion , another geographer, who wrote his work about 900 A. D. : He said, " The source of the Tigris is a spring at longitude $64^{\circ} 40'$ " or 65° " or $39^{\circ} 5'$, and in latitude $38^{\circ} 30'$ passing between two mountains at longitude $64^{\circ} 45'$ and latitude $37^{\circ} 45'$. It is obvious that either both of them depended on one source or that Ibn Serapion quoted from al-Khwarizmi, which in fact means that both present the geography of Ptolemy .

Ibn Serapion, " Description of Mesopotamia and Baghdad ", p.9.

6) Ibn Serapion differed from al-Khwarizmi in his description of the lower course of the Tigris . He stated that after al-Bataih the river followed Abu al-Asad canal and flowed finally into Dijla al-'Aura " the Blind Tigris , or Shatt al-'Arab " .

Ibid, p. 28

The Arab geographers differed from the Greeks in their accounts of the lower course of the Tigris because a change in this part of the river took place in the year 629 A.D. (7)

Affluents of the Tigris

Al-Khwarizmi first mentioned a river called Nahr al-Dhib (the Wolf river) . Its source was in a mountain at longitude $68^{\circ} 30'$ and latitude $39^{\circ} 5'$ and it flowed into the Tigris at longitude $68^{\circ} 30'$ and latitude $36^{\circ} 30'$. (8) There also flowed into the Tigris a river called " Fakus " . (9) Its source was a mountain spring at longitude $69^{\circ} 5'$ and latitude $39^{\circ} 20'$. Its junction with the Tigris at longitude $69^{\circ} 15'$ and latitude $36^{\circ} 30'$. Al-Khwarizmi also mentioned the two Zabs . The

7) In this year " 629 A . D . " the Tigris changed its course from a westerly one " the present course " to more easterly course , passing through Wasit .

For the reasons for this change see Chapter 11 " al-Bataih " .

8) This latitude, $36^{\circ} 30'$, is given in al-Khwarizmi's *Surat al-Ard* as $23^{\circ} 30'$, which is impossible . Ibn Serapion p. 17 gave this latitude as $36^{\circ} 30'$ and , as already said , Ibn Serapion quoted from al-Khwarizmi or quoted from the same source . Thus either al-Khwarizmi or the editor of the text misquoted the latitude .

9) This is apparently Nahr "Fafan" of Ibn Serapion p.17 and Nahr al-Razm of Yakut vol. 111 , p. 845 and vol. 11 , p. 552 , who said : " As the Tigris passes by Tell Fafan there flows into it Wadi al-Razm . "

source of the first was in a mountain at longitude 71° عال and latitude $38^{\circ} 30'$ ل ح . It flowed into Tigris at longitude $69^{\circ} 30'$ س ط ل and latitude $35^{\circ} 30'$ ل ل . (10) The second Zab had its source at longitude $72^{\circ} 5'$ ع ب and latitude $38^{\circ} 5'$ ل ح , and it flowed into the Tigris at longitude $69^{\circ} 40'$ س ط م and latitude $35^{\circ} 5'$ ل ل . (11)

When speaking of the Tigris al-Khwarizmi mentioned certain ciphers but these might have been of greater help if he had also mentioned the names of these places . In his work, al-Khwarizmi did not mention some of the important affluents , such as al-Khabur and Diyala . Besides , his information about the two Zabs was not satisfactory . According to Kud-

10) This is called " al-Zab al-A'la " or " al-Zab al-Kabir " « the Upper or the Great Zab » . It was called by the Arabs al-Zab al-Majnun « the Mad Zab » from its impetuous current .

Yakut, op. cit . , vol. 2 , pp. 902—903

For example : the discharge of the Upper Zab in May 1926 was 1320 cu . m .

Per second and in August 90 cu.m. and in September 61 cu.m.

Ionides, " The Regime of the Rivers Euphrates and Tigris " , p . 126 .

11) This is called al-Zab al-Asfal or al-Zab al-Saghir « the Lower or the Small Zab » . The discharge of the Lower Zab in May 1926 was 500 cu . m . per second and in August and September 39 and 29 cu . m . per second respectively .

Ibid .

12) op. cit . , p . 232

ama (12) and Yakut (13) the Tigris rose at a place called 'Ayn Dijla (the spring of the Tigris) , (14) two and a half days ' march from Amid . (15)

Al-Khabur was described by Yakut (16) as a river which rose in al-Zawzan or , according to al-Mas'udi , (17) from Armenia , and joined the Tigris between Basorin and Fisabur (present Fish Khabur) .

Yakut gave us better information about both the Upper

13) op. cit . , vol. 2 , p. 551

14) This is the spring of Strabo vol. V , p. 329 , and also of Pliny vol. VI, p. 435 .

15) Yakut mentioned a cavern vol. 2 , p. 551 , from which the Tigris gushed out . This is the cave of Pliny vol. VI, p. 435 , and the underground course of Strabo vol. V, p. 229 . This cavern was mentioned by the geographers of the Mongolian era, such as Ibn 'Abd al-Hak "Tomus Secundus , p. 392 . J. G. Taylor saw this cavern when he visited the sources of the Tigris . He said : " After a course of three miles the principal stream of the Tigris plunges into a lofty cavern and is lost underground for a distance of two miles , emerging on the southeast and then continuing its course towards Diyar Bekr . " He added that the numerous masses of rocks which now choke the stream near the cavern , and the detached arches , seemed to indicate that the tunnel was formerly of much greater length than it is now .

Taylor, J. G . , " Notes on a visit to the sources of the Tigris . with an account of the ancient remains found in their neighbourhood " .

P. R. G. S. , vol, 11 , p. 37, 1864—5

16) op. cit . , vol. 2, pp. 384, 552

17) op. cit . , vol. 1, P. 227

and the Lower Zab . (18) He said that the Upper Zab flowed from Mushtakahr between Adharbaijan and Rabghish , its waters being at first red in colour , but when it reached Bashzi they ran clear and then joined the Tigris one mile (Arabic mile) from al-Haditha , while the Lower Zab flowed from Jabal al-Silk (present Lahijan) between Shahrazur and Adharbaijan , passing , between Dakuka and Arbil and finally joining the Tigris at al-Sinn .

In his work al - Khwarizmi did not give enough information about the middle course of the Tigris . It seems that the river had not kept its course , but it had taken an eastern course . The river bed , however , during the middle ages , took an almost straight line from Kadisiya (60 miles above Baghdad) to Baradan , and the ruins of the towns are still to be seen on a dry channel called al-Shutaita . (19)

The shifting of the Tigris to its new course happened gradually . It started probably before the 10th century . Al-Mas'udi (20) (in the 10th century) was asking about references to the law suits to which this changing of the stream had given rise , between the owners of the lands on the eastern and the western banks of the Tigris , to the north of Baghdad .

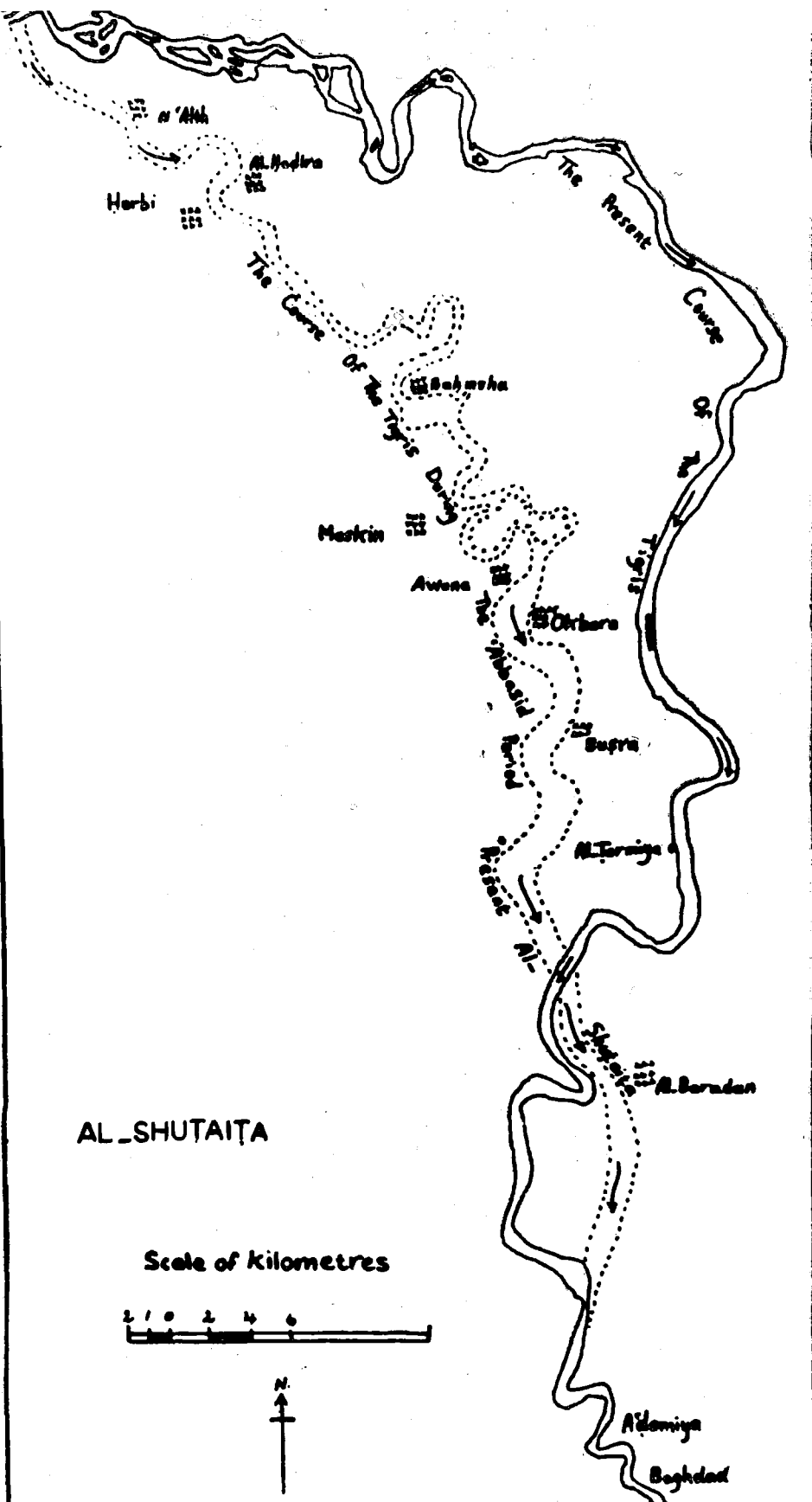
The process of shifting continued until the year 1226 ,

18) op. cit . , vol. 2, pp. 902—3

19) See the map of al-Shutaita .

20) op. cit . , vol. 1, p. 223

MAP No. 7 (After Sousa)



the beginning of the regn of al-Mustansir , who realised the bad results of this shifting , so he re-dug and widened al-Dujayl canal and built Jisr Harbi in order to keep the water running by the towns which were threatened by the shifting of the Tigris .

The first mention of this shifting was by Ibn 'Abd al-Hak (1345) . He described al-'Alth as a small village between 'Okbara and Samarra . Al-'Alth was on the eastern bank of the Tigris and in his time it was on " al-Shutaita " . (21) This suggests that the shifting had been completed .

Probably the complete shifting took place at the end of the reign of al-Nasir (1180 — 1225) . thus when al-Mustansir came to power (1226 — 1242) he saw the horrible disaster of the people living on al-Shutaita , and he redug and widened al-Dujayl canal and also dug several other canals leading to the lands on the bank of al-Shutaita . (22)

Below Baghdad the river Tigris received its most important affluent on the left bank , viz . the Diyala river . It was called by the Arabs al-Nahrawan , also Tamarra . According to Ibn Rustah (23) and Ibn Khurdadhbih (24) it rose in Armenia

21) op. cit. , Tomus Primus , P. 271 .

22) al-Siyuti p. 476, described al-Nasir as of wicked disposition and said that Iraq was ruined in his reign .

23) op. cit. , p . 90

24) " Kitab al-Masalik wal-Mamalik " , P. 175

(which is wrong), while Yakut reported (25) that it rose in Shahrzur . The river got the name Tamarra after passing " Bab Silwa " , then at Bajisra it was called al - Nahrawan . Yakut described how its bed had been artificially paved for a length of seven leagues to prevent the sands from absorbing its waters , which were divided up into seven canals to irrigate several districts of East Baghdad . The canals were : Jalula , Mahrudh , Tabik , Burzi , Baraz al-Ruz , al-Nahrawan and al-Dhanab (otherwise called Nahr al-Khalis) .

(b) The Tigris according to the geographers of the Mongolian era

(1) Abu al-Feda , a leading geographer of the Mongolian (Il-Khanid) period , in his description of the Tigris quoted various data from Ptolemy and from the earlier Arab geographers , but he also gave us some comments of his own .

Abu al-Feda began his description of the Tigris by saying that it was a great river which flowed from Belad al-Rum , thence passing by Amid , Hisn Kaifa , Jazirat Ibn 'Omar , Mosul , Tekrit , Baghdad , Wasit , Basra , until finally it flowed into the Arabian Gulf . (26)

He added that : " The source of the Tigris is at longitude

25) op. cit . , vol. I , P. 813

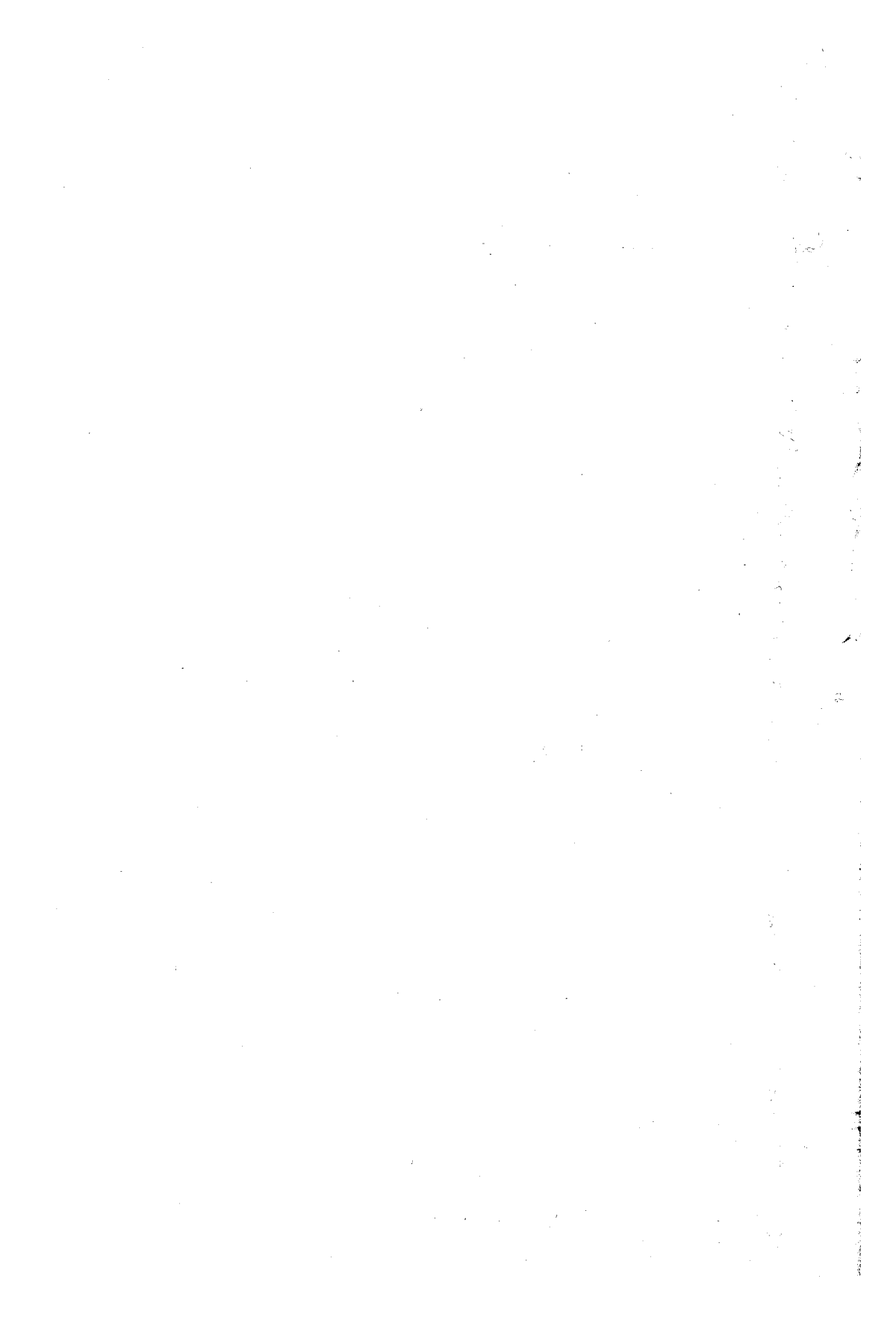
26) See the map of the Tigris as described by Abu al-Feda .



MAP OF IRAQ AND AL-JAZIRA

As Described By Abu Al-Feda

MAP No. 8 a



64° 40' and latitude 39° 00', (27) but, according to al-'Azzizi, al-Muhalabi, the Tigris rose to the north of Miyafarikin beneath Hisn Dhi al-Karnain (the castle of Alexander) .

The Tigris turned from the north-west to the south-east to longitude 64° and latitude 37°. Then it flowed by the following : Amid at longitude 65° 40' and latitude 37° 52', Jazirat ibn 'Omar, Mosul, 'Okbara, Baradan and through Baghdad at longitude 70° and latitude 33° 15'. The Tigris below Baghdad passed by several towns as far as Nu'maniya at longitude 70° 20' and latitude 33°, then the river turned to the south-east to Fam al-Silh at longitude 72° 20' and latitude 32°. Here the river made a great bend and turned to the west to Wasit at longitude 71° 30' and latitude 32°. Then it turned to the east to Bataih Wasit at longitude 73° and latitude 32°. The river, after leaving al-Bataih and tending to the south-east, passed al-Basra, Ubulla and 'Abbadan and finally flowed into the Arabian Gulf at longitude 75° and latitude 31° .

Affluents of the Tigris

Abu al-Feda mentioned Nahr Arzn and Basanfa . The

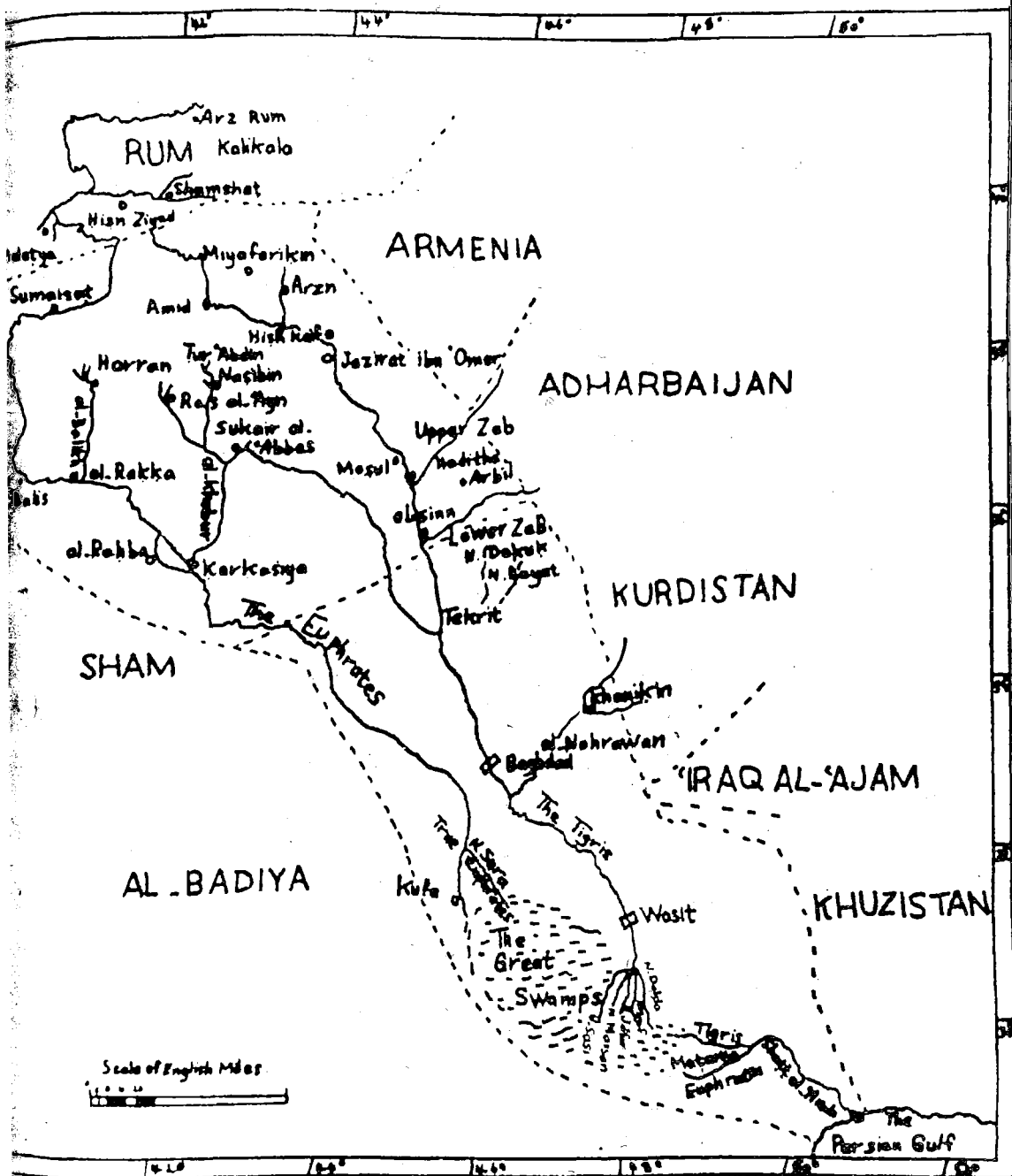
27) According to Abu al-Feda this information was quoted from "Rasm al-Ma'mur". The author of this book is Ya'kub ibn Ishak al-Kindi, and it is more or less an extraction from Ptolemy's geography.

latter rose in the land of Miyafarikin and flowed into the Tigris five leagues above Jazirat ibn 'Omar . There also flowed into the Tigris al-Zab al-A'la . It rose in Adharbaijan and it joined the Tigris near al-Sinn at longitude 68 and latitude 35° 15' . The second Zab (i . e . al-Zab al-Asghar " the Lesser Zab ") , flowed from Jibal Shahrazur , passing between Dakuka and Arbil , and finally flowed into the Tigris . Abu al-Feda also mentioned al-Katul al-A'la and continued by describing al-Nahrawan canal .

In his description of the Tigris , Abu al-Feda followed the earlier geographers , such as al-Khwarizmi , Ibn Serapion and others . The only difference was in the lower course of the Tigris below al-Bataih . He gave us the same information concerning the middle course of the Tigris as did the earlier Arab geographers , although the Tigris had already changed its course more than a century before Abu al-Feda wrote his work .

As far as the affluents of the Tigris are concerned his information was confused and sometimes wrong . He mentioned Nahr Arzn without giving any details about it . (28) He gave " al-Sinn " as the point where al-Zab al-A'la (the Upper Zab) joined the Tigris , which is wrong , because the Upper Zab joined the Tigris below Haditha , and he did not mention where the Lower Zab joined the Tigris . Abu al-Feda

28) Nahr Arzn is probaly Nahr al-Dhib of al-Khwarizmi .



MAP OF IRAQ AND AL-JAZIRA

In The 14th Century A.D.. As Described By Hamd-Allah Al-Mustawfi

also mentioned al-Katul and al-Nahrawan as still being derived from the Tigris which proves that he quoted without any investigation .

Finally , Abu al-Feda omitted to mention some of the affluents such as al-Khabur and Diyala . Nevertheless , the picture presented by Abu al-Feda of the sources and the lower course of the Tigris continued to be mainly correct during the following centuries except in the lower course where the Tigris shifted to its present one at the end of the 16th century .

(2) After Abu al-Feda , the next geographer to give us detailed accounts about the Tigris was al-Mustawfi . He was in charge of the tax office in Iraq in 1335 A.D. and finished his work " Nuzhat al-Kulub " in 1340 A.D.

Al-Mustawfi , like the earlier geographers , gave us the traditional information about the sources of the Tigris . He said that the river rose in the mountains to the north of Amid, in the chain forming the frontier of Hisn Dhu al-Karnain (the castle of Alexander) . Many streams joined the Tigris as it passed through the district of Rum . The most useful and distinctive information given by al-Mustawfi was about the lower Tigris . According to him , below Wasit five considerable canals were taken from its stream , namely the Dakala, I'raf , Ja'far , Maysan and Sasi canals , until eventually so little water remained in the main channel that boats could no

longer pass down it . (29) The remaining waters of the Tigris joined the Euphrates near Matara and thus formed Shatt al-'Arab , which flowed into the Arabian Gulf below Basra .

Affluents of the Tigris

Among the affluents of the Tigris al-Mustawfi mentioned the two Zabs , and the Diyala (which he called al-Nahrawan river) which , according to him , had two heads , both of which rose in the Kurdistan mountains . The Shirwan stream flowed from Shirwan district , and when this reached Tamarra it was known as the Tamarra river , and it took the name of al-Nahrawan when it joined the other branch . The other head stream flowed from a spring in the district of Gil and Gilan . Then it passed to Hulwan , Kasr Shirin , Khanikin and beyond this joined the first headstream . The united river passed to Ba'kuba and finally joined the Tigris below Baghdad .

Al-Mustawfi also mentioned Nahr Bayat and Nahr Dakuk as flowing from the Kurdistan mountains . The former came down to the district of Bayat and became lost in the plain , the latter flowed by Dakuka and became lost in the sands (bet-

29) Al-Kazwini reported P. 178, that after leaving Wasit, the river Tigris was divided into seven navigable rivers . They were : Nahr Sasi, Nahr al-I'rak " al-'Iraf of al-Mustawfi ", Nahr Dakla, Nahr Ja'far, Nahr Maysan and Nahr Houvri . These seven rivers joined the Euphrates near Matara " a day's march above Basra " .

See the map of Tigris as described by al-Mustawfi .

ween the Lower Zab and the Diyala river) . In fact these two branches together with others formed Nahr al-'Adeim . (30)

The information of al-Mustawfi concerning the Upper and Middle Tigris was the same as that of the earlier Arab geographers . His greatest and most useful information was about the lower Tigris , especially the joining of the Tigris and the Euphrates near Matara , which in fact represented present-day Kurna .

Thus we understand from al-Mustawfi and from al-Kazwini who preceded him (about 1280 A.D.) that the Tigris and the Euphrates had distinct courses below al-Bataih , and they merged near Matara (since the end of the 13th century) to form Shatt al-'Arab .

Al-Mustawfi , like Abu al -Feda and the earlier Arab geographers , omitted to mention al-Khabur .

It may be noted that al-Khwarizmi , Ibn Serapion , Abu al-Feda and other geographers thought that the source of the Tigris was near or to the north of Miyafarikin , which implies that those geographers supposed it to be the main Tigris , but it is known now that the river of Diyar Bekr is the main Tigris . (31)

30) See the map of the Tigris as described by al-Mustawfi .

31) According to Chesney vol. 1, P. 17, the river of Diyar Bekr is no doubt the true Tigris. The windings of the Diyar Bekr river have a length of more than 150 miles and a width of nearly 250 yards, while those of the tributary of Miyafarikin are less than 100 miles long and 150 yards or less, wide .

3 — The Euphrates (32)

a — The Euphrates according to the geographers of the pre-Mongolian period

According to al-Khwarizmi, the source of the river Euphrates was at a spring in Jabal Afradkhis at longitude $سح ل$ $68^{\circ} 30'$ and latitude $ما ك$ $41^{\circ} 20'$, (33) then the river passed by Jabal Masfina (34) at longitude $س ك$ $60^{\circ} 20'$ and latitude $مب ك$ $42^{\circ} 20'$. Then it passed through mountains and by different cities as far south as Anbar. Part of it passed to Kufa to a place at longitude $ع ا ه$ $71^{\circ} 5'$ and latitude $ل ا ه$ $31^{\circ} 5'$. Finally it flowed into al-Bataih at longitude $ع ج ه$ $73^{\circ} 5'$ and latitude $ل ج$ $31^{\circ} 30'$.

32) The Euphrates is known as al-Furat, meaning the sweet water.

33) The name of this mountain was mentioned by Ibn Serapion P. 10 as Akradkhis, while Kudama P. 235 mentioned it as "Brojis" and no other authority mentioned it.

34) The name of this mountain, Masfina, was not clear in the book of al-Khwarizmi. It was written as صفبا. Both Ibn Serapion P. 10, who quoted from al-Khwarizmi or depended on the same reference, and Kudama P. 233 mentioned the name of the mountain as "Masfina". Moreover, Ibn Seradion gave the same longitude and latitude of the mountain. He said: "Jabal Masfina at longitude $س ك$ $60^{\circ} 20'$ and latitude $مب كه$ $42^{\circ} 25'$."

Affluents of the Euphrates

Al-Khwarizmi mentioned one affluent which flowed from a mountain at longitude $62^{\circ} 20'$ and latitude $41^{\circ} 5'$, it passed by Hinzit and finally joined the Euphrates at longitude $61^{\circ} 30'$ and latitude $39^{\circ} 20'$.

The information of al-Khwarizmi concerning the Euphrates was insufficient besides, he did not mention most of the important affluents such as al-Balikh and al-Khabur. A contemporary writer, namely Ibn Serapion, gave us better and clearer data, especially about the lower course. According to him, six leagues after the Nahr Kutha (the Kutha canal) had been led off from the Euphrates, it divided into two branches. Of these the true Euphrates passed down to Kufa where a bridge of boats crossed over it, and it flowed into the swamps. (35) The other branch (of the Euphrates) was greater and broader even than the Euphrates itself. It was called the Upper Sura Canal. It passed in front of the city of Ibn Hubairah and, after irrigating the domains on both banks, it finally flowed into the "Great Swamps". (36)

35) This branch is the Gihon of 'Eden paradise, the Chabur of Ezekeil, the Pallacopas of Alexander, Nahr Kufa or al-'Alkami of the Arabs and the present-day Hindiya branch.

Kudama, op. cit., p. 233

Willcocks, op. cit., p. 14

36) Ibn Serapion, op. cit., p. 16

Ibn Serapion gave the Kufa branch as the true Euphrates of his period (i . e . 10th century) , yet he admitted that the Sura branch was greater and broader even in his day than the Kufa branch . This is an interesting fact and was confirmed by Yakut , who said (37) that the river Euphrates below Hit divided into several branches and Nahr Sura was the biggest . This means that the Euphrates had already started to change its course from that which passed by Kufa (present Hindiya) to Nahr Sura (i . e . present Hilla branch) . It seems that the shifting started before the 10th century and was going on gradually and was entirely completed during the 14th century .

(b) The Euphrates according to the geographers of the Mongolian era

(1) Abu al-Feda

The knowledge of Abu al-Feda concerning the Euphrates and especially its middle course was better than his knowledge of the Tigris . This was probably due to his intimate friendship with al-Muhana (who settled between the Euphrates and Syria) who had fiefs in Iraq . Thus he made successful corrections , but still he quoted from other books .

Abu al-Feda spoke about the sources of the Euphrates ,

37) op. cit . , vol . 111 , p . 861

then its affluents . (38) He said that the Euphrates, sources were to the north and east of Arzn al-Rum at longitude 64° and latitude $42^{\circ} 30'$, then it passed to near Malatya at longitude 61° (or 39° and latitude 37°) . The river Euphrates passed to Sumaisat at longitude 62° and latitude 37° ' then it tended to the east , passing by Kala't al-Rum (the Roman fortress) to Bira . From thence it passed several towns to 'Anah and finally to Hit where it entered the alluvial plain .

Six leagues below the head of the Kutha canal (which flowed from the Euphrates) the Euphrates bifurcated . One of the divisions passed south-wards to Kufa and finally flowed into al-Bataih, while the second-which is the biggest - passed by Kasr ibn Hubairah at longitude $71^{\circ} 30'$, and latitude $32^{\circ} 45'$, and known as Nahr Sura . It passed to ancient Babylon at longitude 70° and latitude $32^{\circ} 15'$. from thence it passed southward where it also bifurcated .

Affluents of the Euphrates

Abu al-Feda mentioned Nahr Shamshat which , according to him , passed by Shamshat , Hisn Ziyad and finally flowed into the Euphrates to the north of Malatya . A second affluent was al-Balikh . Its source was in the land of Harran at a spring called 'Ayn al-Dhahbaniya . It joined the Euphrates below Rakka . The third affluent was al-Khabur . Its

38) See the map of the Euphrates as described by Abu al-Feda .

source was near the city of Ras al-'Ayn at a spring called 'Ayn al-Zahiriya . It flowed into the Euphrates near Karkasiya , while the source of its tributary , al-Hirmas , was at Nasibin and joined the Khabur above Karkasiya . From the Hirmas there flowed a river called al-Tharthar , which , passed by al-Hadr and finally flowed into the Tigris at Tekrit .

Abu al-Feda did not present any new information concerning the source and the course of the river Euphrates as far as Hit . His observation that the river enters the alluvial plain at Hit was quite correct . Abu al-Feda took this fact from "Sulaiman ibn Muhana" . (39)

Regarding the course of the river below Hit , Abu al-Feda quoted from other geographers , such as " the Sura canal passed by Kasr ibn Hubairah " . This town , in fact , had fallen to ruin since the 6th (12th) century , as a result of the rising importance of Hilla . (40)

Besides , in this period the Sura became the main course of the Euphrates (or the true Euphrates) . Moreover , he did not give us enough data about the joining of the Euphrates and the Tigris near Matara .

39) Abu al-Feda , op. cit . , p. 51

Sulaiman ibn Muhana was a chief of al-Fadl tribe « from al-Tai » , who had fiefs in Iraq .

40) Le Strange, op. cit . , p. 71

(2) After Abu al-Fada , the next geographer's detailed accounts about the Euphrates were al-Mustawfi's .

Al-Mustawfi , like the earlier geographers , gave us the traditional information about the source of the river . (41) He said that it rose in the mountains of Armenia and of Kalikala (42) and of Arzn al-Rum . At its source there was a pool that measured 250 elles in circuit . (43) Below , various other springs and streams joined it , and it became a great river . It passed out of the district of Rum in the neighbourhood of Malatya and came to Sumaisat (on the borders of Syria) . Then it passed to Rakka , 'Anah and Hit . In the Sawad district numerous canals were taken from the Euphrates , namely the 'Isa canal , the Sarsar , Nahr al-Malik and Nahr Nahiyah (the district canal) on which stood the city of Kufa with its dependencies . The Euphrates followed the Sura Canal and finally fell into the swamps . It left the swamps below the Matara village , and there it joined the river Tigris .The united stream became the Shatt al-'Arab .(44)

41) Al-Mustawfi started his accounts p. 202 , by giving the reason for calling the river " Furat " « Euphrates » , which according to him was because of the excellence , wholesomeness and sweetness of its waters .

42) Yakut , op. cit . , vol . 3 , p. 860

43) This is perhaps the spring of Ibn Serapion p. 10 . An ell ذراع is 62 centimetres long .

44) See the map of the Euphrates as described by al-Mustawfi.

Affluents of the Euphrates

Among these al - Mustawfi mentioned al - Balikh , which rose at the spring of Dabanah in the neighbourhood of Harran, and flowed into the Euphrates below Rakka . The second was the river Khabur which rose at Ras al-'Ayn and after passing Karkasiya flowed out into the Euphrates . He also mentioned an affluent of the Khabur called al-Hirmas which rose in the neighbourhood of Nasibin in the Tur 'Abdin and joined the Khabur in the neighbourhood of Hanah .

In his description of the source of the Euphrates it seems that al-Mustawfi recounted all the data given by the different geographers . The pool he mentioned was perhaps the spring of al-Khwarizmi . Al-Mustawfi presented a true picture of the Lower Euphrates . We understand from him that during his lifetime the Euphrates followed the Sura (present Nahr al-Hilla) instead of al-'Alkami (the Kufa canal or present Hindiya) , which had been considered as true Euphrates during the 'Abbasid period . Another piece of fresh information was the joining of the Euphrates and the Tigris after they both came out of the swamps .

Finally it may be noted that the geographers , during the pre- Mongolian and the Mongolian period , considered the present Furat Su as the true Euphrates , which is about 270 miles long from its source to Kaban Ma'den , where it is

joined by the Murad Su . (45) The true Euphrates in fact is the Murad Su , which was mentioned by the Arab geographers as Nahr Arsanas or Nahr Shamshat of Abu al-Feda . The length of the Murad Su is 400 miles . (46)

Apart from Abu al-Feda and al-Mustawfi , no new information was given by the geographers of the Mongolian era such as al-Kazwini , Ibn 'Abd al-Hak , al-Nawairi and al-Kalkashandi . They all gave us the information concerning the Tigris and the Euphrates as represented by the early Arab geographers or by Abu al-Feda .

4 — Conclusion

The 'Abbasid and Mongolian geographers had accurate knowledge of the sources and courses of the Tigris and the Euphrates , together with their affluents , since Persia and the greater part of Turkey were dominated firstly by the Moslems and then by the Mongols and were naturally frequented by merchans , travellers and geographers , who reported what they saw . The facts recorded in the works of the Mongol geographers are , for the most part , still accurate at present day . (47)

45) The original name of this river was Chai , but this was changed to Murad Su in honour of Sultan Murad IV , who crossed this river when he conquered Baghdad in 1638 A . D .

46) Chesney, op. cit . , vol. 1 p. 43

47) In his expedition to survey the rivers Euphrates and Tigris, Chesney applied the data given by Abu al-Feda .

The modern renaming of certain places and rivers accounts for most of the discrepancies . Two points of difference , however , must be mentioned . The Mongol geographers believed that the Tigris rose to the north of Miyafarikin , beneath Hisn Dhi al-Karnain (the castle of Alexander) and the Euphrates to the north of Arz al-Rum (now Furat Su or Kara Su) . Nowadays the river of Diyar Bekr and the Murad Su (Nahr Shamshat of Abu al-Feda) are considered to be the respective main sources . The second difference is due to the shifting of the lower courses of both rivers after the Mongolian period .

The Tigris , according to the geographers of the Mongolian period , rose to the north of Miyaafarikin beneath Hisn Dhi al-Karnain . Then it flowed to Jazira Ibn 'Omar , Mosul and through Baghdad . Sixty miles above Baghdad (below Kadi-siya) the river Tigris changed its course and took a more easterly one . The change took place around 1226 A.D. The previous course was , and still is , known as al-Shutaita . Leaving Baghdad the river passed by al-Madain , at Fam al-Silh (100 miles below Baghdad) it turned to the west, passing through Wasit to flow eventually into al - Bataih . The Tigris came out of al-Bataih and joined the Euphrates below al-Matara to form Shatt al-'Arab , which in its turn

flowed into the Arabian Gulf . (47)

The Euphrates rose to the north of Arzn al-Rum . It passed through Turkey , Syria and Iraq . It entered the alluvial plain at Hit . Six farsakhs below the Nahr Kuthi the Euphrates followed the Sura Canal (present Hilla branch) and finally flowed into al-Bataih . The Euphrates came out of al-Bataih to join the Tigris .

48) Al-Matara corresponds with the present Kurna .

For information about the changes which took place in the Tigris in the 16th century see Appendix 11 .

CHAPTER - 4

Irrigation

1 — Introduction

2 — Irrigation System

(1) The Canals on the Left Side of the Tigris

a — al-Nahrawan

b — al-Kauraj

(2) The Canals on the Right Bank of the Tigris

a — al-Ishaki

b — al-Dujayl

(3) The Canals Traversing the Country from the Euphrates to the Tigris

a — Nahr 'Isa

b — Nahr Sarsar

c — Nahr al-Malik

d — Nahr Kuthi

(4) The Canals of Shatt al-'Arab

(5) The Canals of Baghdad

3 — Conclusion

1 — Introduction

**“ O Thou river who didst bring forth all things ,
When the Great Gods dug Thee out ,
They set prosperity upon thy banks . ” (1)**

The great fertility of the country (and especially al-Sawad) (2) during the 'Abbasid caliphate was due to strict economy in the use of the water supply and to the existence of a comprehensive system of irrigation canals which carried water to the different regions .

In Iraq , where most of the people depended on agriculture and where the weather was excessively hot in summer , and there was very little rainfall , perennial irrigation was necessary .

Since Babylonian and Assyrian times the irrigation system had been gradually increased , until eventually the whole face of al-Sawad was traversed by a network of canals .

The country reached its greatest prosperity during the peaceful years , when the kings were powerful enough to impose

1) Quoted by Willcocks , “ Irrigation of Mesopotamia ”, p. VX .

2) Al-Sawad is a name given by the Arabs to the Iraqi alluvial plain ,

See the Chapter on Administrative Divisions .

their will on the whole of Mesopotamia and held both the Upper and Lower Valleys . The Muslims inherited from the Sassanians a system of irrigation which made Iraq one of the richest countries in the then known world . The system , in brief , was to water the country lying between the Tigris and the Euphrates by a number of transverse canals flowing to the Tigris , while the districts to the east of this river , extending to the foothills , were watered in part by the streams which rose in the eastern hills and in part by a series of loop canals branching from the left bank of the Tigris . These loop canals , in their turn , absorbed the flood waters of the many small rivers rising in the eastern hills .

The earlier 'Abbasid caliphs did their best to keep the irrigation system in good condition . They added new canals and re-dug ancient ones . Most of al-Sawad was under perennial irrigation and was intensively cultivated . Villages were distributed closely all over the country and the Arabs of the early caliphate used to say that the villages on the Tigris and the Euphrates were so numerous that the cocks , in crowing , answered each other from house to house all along the way from Baghdad to Basra .

The cleaning of the canals was a vital necessity , as it is today , because the rivers Tigris and Euphrates , in the days of flood , carry matter in suspension which may amount to 750 parts in 100 , 000 . This fact affords tangible evidence that

the ruin of the irrigation system was in part due to the heavy deposits . (3) The Assyrians and the Babylonians filled their countries with captives from foreign lands to clean the canals. The code of Hamourabi made the maintenance of the river banks the duty of the owners of the land adjoining it , while the dredging of the canals was the duty of the district governor . In the time of Nebuchadnezzar , we find men being hired for this purpose . They were called “ Kalle narri ” or canal labourers . (4) The earlier 'Abbasid caliphs solved the problem of the silting up of the canals by a yearly cleaning, done partly by the government and partly by the farmers . They had a special Divan (office) called “ Divan al-Akriha ” to supervise the irrigation and the canals . According to Abu Yusuf (the chief Kadi of Baghdad during the reign of Harun al-Rashid) , the duty of the government was to dig new canals, clean them continuously , co-operate with the people in protecting them and to participate in paying the labour appointed to clean them . (5) The government exacted higher

3) According to Willcocks p. 4 the Tigris and the Euphrates carry in flood for a few days every year over four times as much silt as the Nile . Irrigation with such water is not an easy task . even today . It was very difficult in those days when men were ignorant of every kind of weir or barrage except the earthen dams .

4) Haider, “ Land Problems of Iraq ” , pp. 20—30

5) Sousa , “ The development of irrigation in Iraq ” , p. 58 ,—

taxes from the lands which were irrigated than from those which were not . On unirrigated lands the state share was a twentieth . If , however , water was supplied by flow , that is irrigation by canals , a further twentieth (in all , one tenth) was demanded in return for the water . Where water was obtained by lift , no extra charge was made and the land was treated for assessment purposes as if it were unirrigated .

Besides the canals , water-wheels were also used to irrigate the highlands , especially those between 'Anah and Hit , and Samarra and Mosul . (6)

After about the ninth century A.D. the prosperity of the country began to decline . The central government became very weak , and there was a phantom caliph or a puppet in Baghdad , with independent kings at Mosul , Hilla , Sinjar , Arbil and Basra . There existed a collection of small governments which continuously raided and fought amongst themselves .

Baghdad 1946 .

al-Sufi , " Ard al-Sawad " , p. 28 , Mosul 1955 .

According to al-Khudari pp. 154—155 the dredging of the big canals was done in part by the government and in part by the farmers , while the small canals were cleaned by the farmers alone . The digging of new canal was the duty of the government , which was supposed to pay all expenses .

6) According to Tiexeira p. 34 irrigation from the Euphrates was done by an engine , consisting of skins and driven by oxen .

The whole system of irrigation was neglected , the canals silted up , the dams and the dykes were swept away and the rivers changed their courses . It is not surprising that fertility and wealth began to decline . (7) Several canals , such as al-Dujayl and the 'Isa canal , survived the Mongolian conquest , but they silted up continuously .

Several canals were dug during the time of the Il-Khans and the subsequent dynasties . Ghazan the Il-Khan and Owais the Jalair in particular tried to restore the prosperity of the country , but the frequent revolts of the local governors, civil wars , floods and the changes of dynasty hindered the repair of the dams and the clearing of the canals . Most of the canals which survived the Mongolian conquest silted up during the long Ottoman occupation , and ultimately we find that after the first world war the cultivated lands were partly under water (marshlands) and partly dry with only patches of agriculture here and there .

The general lines of any irrigation system in Iraq are in part determined by the following relations of its surface level . (8)

7) The later 'Abbasid caliphs , and especially al-Mustansir , who re-dug the Dujayl canal and built Jisr Harbi , tried to bring back the prosperity of the country .

8) The principal sources of water in the country for irrigation purposes are the two rivers - the Tigris and the Euphrates - and their affluents .

1 — The Euphrates from Felluja to Diwaniya is higher than the Tigris between Baghdad and Kut al-Amarah , and commands the country between the two rivers . (9)

2 — From the left bank of the Euphrates between Felluja and Diwaniya and from the right bank of the Tigris between Baghdad and Kut , the ground falls gradually , the slopes from the two rivers forming a depression which affords facilities for drainage .

3 — The Tigris from Kut to Kurna is higher than the Euphrates from the neighbourhood of Nasiriya downstream , and commands the country between the two rivers . (10)

4 — The country on the left bank of the Tigris from the neighbourhood of Sumaika down to Kut al-Amarah is commanded by the Diyala and in part by the Tigris .

It is clear that the Arabs and their predecessors , the Sassanids , Babylonians and others knew these characteristics of al-Sawad and applied them with great accuracy in their irrigation system .

9) The ground levels on the Euphrates at Felluja : 130 feet above sea level ; at Diwaniya 85 feet . On the Tigris at Baghdad : 105 feet ; at Kut 72 feet .

N. I. D., op. cit., vol. 1 , p. 145

10) The ground levels on the Tigris at Kut al-Amarah : 79 feet ; at Kurna 13 feet . The ground levels on the Euphrates at Nasiriya : about 10 feet ; while at Basra , about 8 feet .

2 — The Irrigation System

The irrigation system comprised thousands of diverse canals of which the following were the most important . (11)

(1) The Canals on the Left Bank of the Tigris

a — al-Nahrawan

This great canal , nearly 200 miles long and in some places 120 metres wide and 10 metres deep , was originally dug by the Sassanian kings. It served to irrigate the land on the eastern bank of the Tigris from a point more than a hundred miles north of Baghdad to as far south as the present Kut al-Amarah.

In order that sufficient water could be obtained for this canal , the Tigris , at a point 10 miles below Samarra , was diverted by a dam made of rock (known as Nimrud's dam) , to flow over a natural weir of conglomerate which raised the level of the river by 10 metres , so that at such a high level it could supply the canal with water .

The canal had originally three heads , namely al-Katul al-Kisrawi , al-Kaim and al-Sanam . These three heads served several purposes . When one head was being cleared , the others supplied the water of the whole system , or as in the

11) For more details about the irrigation canals during the 'Abbasid period see Appendix 111 .

case of al-Nahrawan , al-Kaim was the head which drained the water in summer when it was clear and at a low level , while al-Sanam was the winter head , when the river was high and carried much silt . (12)

The sources of the waters of al-Nahrawan canal were the river Tigris , Nahr al-'Adeim , Nahr Diyala and other streams . This canal was intended for irrigation , navigation and flood relief .

It seems that al-Nahrawan canal did not stay for a long time in a serviceable condition . During the 9th and 10th centuries A . D . this project was neglected : the canals silted up and the dams were left with -- out any maintenance . In 1226 A . D . when Yakut wrote his Geographical Dictionary , the lands on the banks of al-Nahrawan , which once flourished with different crops , had become no more than a desert . He reported that by the 7th (13th) century , the lands on the banks of al-Nahrawan had entirely gone out of cultivation for the canal had gradually silted up during the previous two centuries . The Seljuk sultans were always too much involved with their wars to attend to the needful dredging , and the mending of the dykes . Furthermore Yakut added that the Seljuk armies had made a roadway

12) Le Strange , op. cit . , p. 57

Willcocks , op. cit . , p. 11

Sousa , op. cit . , vol . 1 , pp. 144-152

See the map of Irrigation .

of this same canal . (13) In the time of al-Mustawfi , al-Nahrawan no longer existed , but its course could be traced and , from what he reported , it had evidently gone out of use before his day , for he gave the name of al-Nahrawan to what is now known as the Diyala river . (14) Thus it is obvious , from what Yakut wrote concerning al-Nahrawan , that it silted up long before then .

b — al-Kauraj

It seemed that in the Sassanids ' era the upper head of al-Nahrawan (al-Katul al-Kisrawi) used , especially in the summer time , to drain most of the water of the Tigris which threatened cultivation on al-Kaim and al-Sanam canals , Yakut reported that the residents complained of their problem to Chosroes , who ordered another canal to be dug . This new canal was called "al-Kauraj" . (15) Its origin was near al-'Alth where a dam made of rock was constructed across the Tigris , in order that sufficient water might be obtained for this canal . (16) The canal was about 80 kilometres long

13) Yakut , op. cit vol. 4 , pp. 240—250

al-Kazwini , op. cit . , pp. 183—4

Ibn al-Wardi , " Kharidat al-'Ajaih " , p. 139

14) al-Mustawfi , op. cit . , p. 23

15) op. cit . , vol. 4A , P. 199

16) Sousa , " The Irrigation System of Samarra during the 'Abbasid Caliphata " , vol. 1 , P. 212

from al-'Alth to its confluence with al-Nahrawan to the south of Bohruz . During the 'Abbasid era , namely during the reign of Harun al-Rashid , al-Kauraj became damaged , so al-Rashid closed its head to prevent water running through it . The canal was the principal cause of most of the damage to Baghdad during flood seasons in the 13th and 14th centuries . According to al-Kazwini (17) and Ibn 'Abd al-Hak (18) the governors tried their utmost to close the head of this canal but still every year it caused the same damage . There is no mention of al-Kauraj after the 14th century , which suggests that it had silted up .

(2) The Canals on the Right Bank of the Tigris

a — al-Ishaki

This was a big ancient canal , taking off from the Tigris, near Tekrit , which ran southwards , and after irrigating most of the land of the southern part of al-Jazira , flowed into Hawr 'Akarkuf . (19) This canal was silted up until al-Mu'tasim built his new capital (Samarra) in the year 221 A . H . (836 A . D .) . In order to irrigate the western side of the Tigris (on the other side of Samarra) , he planned to dig

17) op. cit . , PP . 183—4

18) Ibn 'Abd al-Hak . op. cit . , Tomus Primus , p . 458

19) Sousa , op. cit . , vol . , 1 , P . 80

a new canal , which on called al-Ishaki , after Ishak Ibn Ibrahim , the chief of police , who had undertaken the digging of the canal . (20) It began a short distance below Tekrit , (21) and had on its banks both domains and cultivated lands . Then it passed by Tairahan and the palace of al-Mu'tasim , known as Kasr al-Jass . Here it irrigated the domains and the villages extending westward of Samarra . Finally , the canal flowed into the Tigris opposite al-Matira , south of Samarra . (22)

Al-Ya'kubi praised the gardens which were irrigated by this canal . (23) Samarra rapidly fell to ruin , when the caliph returned to Baghdad in 279 A . H . This canal survived the Mongolian conquest . Both the canal and its district were mentioned by some of the geographers of the Mongolian era . (24) There was no mention of al-Ishaki canal by the end of 13th century , which suggests that the canal had

20) al-Kazwini , op. cit . , P. 258

al-Kalkashandi , op. cit . , vol . 4 , P. 325

21) Ibn Sesapion , " Description of Mosopotamia and Baghdad " , P. 18 . Chesney , op. cit . , vol . 1 , P. 28

22) Ibid , pp . 18—19

23) " Kitab al-Buldan " , P. 363

24) This canal was mentioned in the map of al-Jazira which was drawn by Ibn Haukal as flowing from south Tekrit to al-Sarat " Kitab al-Masalik wal-Mamalik " . The map of al-Jazira .

Ibn Sa'id , op. cit . , P. 74 M. S.

gone to ruin . (25)

b — al-Dujayl

Al-Dujayl was a fine work over 100 kilometres long . It took off from the Tigris at a point opposite Kadisiya to the south of Samarra , (26) and after watering the district of the same name on the right bank of the river Tigris , it rejoined the Tigris between 'Okbara and Baghdad . (27)

This canal was one of the important canals during the 'Abbasid era , and many towns flourished on its banks , such as Harbi , Dujayl , etc . This canal was silted up several

25) When Ibn Batutah made his journey from Baghdad to Mosul and Jazirat Ibn 'Omar , he mentioned al-Dujayl canal but he did not mention al-Ishaki . Moreover Abu al-Feda also did not mention al-Ishaki .

Ibn Batutah , op. cit. , P. 102

The government of Iraq recently tried to restore this canal in order to irrigate the lands west of the Tigris .

26) According to al-Idrisi P. 231 al-Dujayl took off from the Tigris to the south of Tekrit . Apparently al-Idrisi mixed both al-Ishaki and al-Dujayl and considered them one canal .

27) According to Ibn 'Abd al-Hak " Tomus Secundus , P. 62 " the Dujayl canal flowed into the ditch of Tahir .

The present Dujayl canal , which flows down the middle of the old bed , is between five and 10 metres wide , which can barely utilize a single arch of the old bridge over the ancient Dujayl " Jisr Harbi " .

times but it was always cleared , (28) After the shifting of the Tigris which took place in the 13th century (about the year 1226 A . D .) , the Caliph al-Mustansir dug a new head to the canal to the north of the previous one which was to the north of Sad al-'Alth (to the south of Kadisiya) . He widened its course and dug new canals to irrigate the lands which were left dry after the shifting of the Tigris . He also built Jisr Harbi on the canal (in the year 1231 A . D .) to link its two banks . (29)

This canal survived until after the Ottoman conquest . According to al-Mustawfi , the revenues of the Dujayl district (which was irrigated by the Dujayl canal) were 35,000 dinars, in addition to the revenues of Harbi (on the Dujayl) which were 25,100 dinars . (30)

When Ibn Batutah passed by al-Dujayl canal , he said that it was a canal which was derived from the Tigris and

28) In the year 1138 Bahruz completed the digging of the Dujayl canal " presumably he meant the re-digging " .

Ibn al-Jawzi , " al-Muntadam " , vol . 10 , P . 165

The process of digging the canal was repeated in 1165 . We understand from al-Siyuti P . 458 that the Dujal canal silted up in the year 1168 and accordingly the seeds did not grow .

29) " Jisr Harbi " , P . 7

The remnants of Jisr Harbi still exist on the way between Baghdad and Samarra ,

30) op. cit . , pp . 47-49

watered a large tract of villages . (31)

According to Ibn Serapion (32) the Dujayl canal was a transverse canal . It began about a league (farsakh) above the village al-Rabb . Then it passed crosswise , and from it branched many canals which watered the domains of Maskin and Katrabul districts , finally it flowed into the Tigris between 'Okbara and Baghdad . Ibn Serapion was the only one who mentioned that the Dujayl canal took its water from the Euphrates . Le Strange , in his book "The Lands of the Eastern Caliphate" , accepted the veracity of this statement and tried to account for the fact that it was mentioned by only one writer by saying that the canal silted up shortly after Ibn Serapion had written his work . (33)

In the year 340 A . H . (951 A . D .) , nearly 40 years after Ibn Serapion had written his book , al-Istakhri , in describing Tekrit , said : (34) "South of Tekrit the head of Nahr Dujayl its water from the Tigris and irrigates most of the Sawad (cultivated land) of Baghdad . " Moreover , the levels near al-Rabb would not allow the construction of

31) op. cit. , P. 102 , vol. 1 , P. 147

32) op. cit. , P. 14

33) Le Strange , op. cit. , P. 51

Arnold , T. W. , and others , " Encyclopaedia of Islam " , vol. 1 , part 2 , p. 970

34) al-Istakhri , " Kitab Masalik wal-Mamalik " , pp. 77 - 78

such a canal to irrigate Maskin and Katrabul . (35) In addition , according to al-Khatib al-Baghdadi (36) al-Mansur dug a canal leading from al-Dujayl and he added that al-Dujayl took its water from the Tigris and this in fact happened before Ibn Serapion had even been born . Thus it seems that Ibn Serapion confused the 'Isa canal and the Dujayl canal , which were both irrigating west of Baghdad and their small canals mixed together , so without further investigation he thought that the Dujayl canal was a transverse canal in the same way as Nahr 'Isa .

**(3) The canals traversing the country from the Euphrates...
to the Tigris**

a — Nahr 'Isa (37)

Nahr 'Isa was a broad navigable canal along which big boats used to pass from the Euphrates on their way to Baghdad . It was the first of four great canals which carried the surplus waters of the Euphrates into the Tigris , and

35) Sousa , op . cit . , vol . 1 , P . 221

36) op . cit . , P . 20

37) This canal took its name from a certain 'Abbasid prince , 'Isa ibn 'Ali , the uncle of the Caliph al-Mansur . He , having re-dug it , made a navigable channel from the Euphrates to the Tigris . Yakut , " Kitab al-Mushtarak Wasfa wal-Mufsarak Saka " , P . 427
al-Nuwairi , op . cit . , vol . 1 , p . 256

and capable of carrying more than half the waters of the Euphrates . (38) It began at longitude $68^{\circ} 50'$ سح ن, and latitude $32^{\circ} 20'$ ب د (39) a little below Anbar . (40) It was crossed there by a magnificent bridge , called Kantara Dimama , from the village Dimama , which was on the bank of the Euphrates south of Felluja . (41) The canal irrigated the district of Firuz Sabur , flowing by villages and domains which lay on both banks . When it reached al-Muhawal , (42) the canals of the city of Mansur branched from it . Then it flowed through nine markets , each one with a bridge carrying the same name , viz . Kantara Yasiriya , Kantara al-Zayatin (oil-sellers) , Kantara al-Ashnan (al-Kali sellers) , Kantara al-Shawk (thorns bridge) , Kantara al-Rumman (pomegranates bridge) , Kantara al-Maghid , Kantara al-Bustan (the garden bridge) Kantara al-Ma'badi

38) This canal was the cause of the changes which took place in the lower course of the Euphrates . In the times of civil wars and riots , when the cleaning of the canals was neglected , the mouth of the canal silted up , the lower course of the Euphrates was not able to carry all the water , and thus it searched for a wider course.

39) Ibn Serapion , op. cit . , PP . 14—15

40) Abu al-Feda , op. cit . , P . 52

41) al-Istakhri , op. cit . , P . 84

42) al-Muhawal means the place of unloading or changing. River barges going from the Euphrates through 'Isa canal down to Baghdad had here to unload into small boats , which could pass the numerous bridges after al-Muhawal .

and Kantara Bani Zuraik . At last it flowed into the Tigris below Kasr 'Isa ibn Musa in the City of Peace (Baghdad) . (43) Of the above bridges only two existed in the thirteenth century , namely Kantara al-Zayatin and Kantara al-Bustan . (44)

The 'Isa canal survived the Mongolian conquest and continued to be navigable during the thirteenth century , and the lands on both banks were still productive during the fourteenth century . (45)

In his " Takwim al-Baldan " Abu al-Feda mentioned Nahr 'Isa , which according to him flowed from the Euphrates at longitude 68° and latitude 32° , but he was not sure of its exact origin . (46) He added that according to Sulaiman ibn Muhana the starting point of the 'Isa canal was below

43) Ibn Serapion , op. cit . , PP . 14—15

44) Yakut , op. cit . , vol . 4B , P . 842

al-Kazwini , op. cit . , PP . 182—3

al-Kazwini gave the name of Kantara al-Zayatin as al-Rammanin .

45) According to al-Mustawfi p . 52 the district irrigated by the 'Isa canal was called al-Mustansiri . Its revenues with its dependencies amounted to 876,505 dinars . Ibn Sa'id added « p. 74 M. S. » that there were 360 villages on this canal .

46) Abu al-Feda p . 52 mentioned that the 'Isa canal flowed from the Euphrates opposite Kufa at a place called Dahma or it started near Anbar below Kantara Dahma ,

Anbar at a village called al-Felluja . In the summer time the water ceased flowing through the canal and the lands on both banks were irrigated by water— wheels from pools left in the course of the canal . He added that the canal then flowed into the Tigris to the west of Baghdad . After al-Muhawal several canals branched out of the 'Isa canal. (47) This means that the mouth of the canal silted up so that the low summer water could not pass through it . The 'Isa canal was mentioned by Ibn al-Wardi and al-Kalkashandi , but it seems that the mouth of the canal gradually silted up and in the sixteenth century the canal was dry . (48) We understand from Teixeira that the water flowed through the 'Isa canal in the flood time , which suggests that it continued to drain the surplus water from the Euphrates .(49)

The 'Isa canal corresponds with the present Saklawiya canal . (50)

47) Ibid .

48) Ibn al-Wardi , " Kharidat al-'Ajaib " , P . 38
al-Kalkashandi , op. cit . , vol . 4 , P . 399

49) op. cit . , p. 46

50) According to Fraser p. 32 the 'Isa canal occupied the course of Nahr Raga of the Babylonians . According to Bewsher pp. 164—165 Abu Gharib canal corresponds with the Nahr 'Isa . The reason for this belief is a ruin of a tomb now in existence on the Abu Gharib canal which was described as being on the Nahr 'Isa , while in fact Abu Gharib canal corresponds with the Nahr Sarsar of the 'Abbasids .

b — Nahr Sarsar

Three leagues below the village of Dimama , the second of the great transverse canals , the Nahr Sarsar flowed off towards the Tigris . It was a great canal with swift-flowing waters . The canal passed by Sarsar , which was described by al-Idrisi (51) as a flourishing agricultural and commercial town nine miles from Baghdad . The town was said to stand on a navigable canal on which there was a bridge of boats , over which passed the pilgrimage road from Baghdad to Mecca via Nejef . Nahr Sarsar continued flowing through arable lands and after irrigating part of Badurya it flowed into the Tigris , on its western bank between Baghdad and al-Madain at a point four leagues above the latter . (52) The lands on both banks were irrigated by means of water wheels (daliyah) and loaded levers (shadoof) . The Sarsar canal survived the Mongol conquest and was described by Abu al-Feda as a canal which flowed from the Euphrates below Nahr 'Isa , by way of Sarsar , until finally it flowed into the Tigris between Baghdad and al-Madain . (53) It was also mentioned by al-Kalkashandi . (54) The canal gradually

51) " Kitab Nuzhat al-Mushtak Fi dhikr al-Amsar wal-Khtar wal-Buldan wal-Jazair wal-Madain wal-Afak " , p. 236

52) Ibn Serapion , op , cit . , p . 15

53) op. cit . , pp. 52—53

54) op. cit . , vol . 4 , p. 399

silted up as a result of the neglect of cleaning the canals . There was no mention of this canal during the fifteenth century . (55)

Nahr Sarsar coincides to a great extent with the present course of Abu Gharib . But the inlet of Abu Gharib lies six miles below Nahr Sarsar . It might be possible that a new head had been dug for Abu Gharib canal , but it runs in the same course . According to Chesney , the head of Abu Gharib canal corresponds with the inlet of Nahr al-Malik , but it is very difficult to agree with Chesney , according to the Arab geographers Nahr al-Malik had its head five leagues below that of the Sarsar , (56) while the head of Abu Gharib is only six miles (two leagues) south of Nahr Sarsar as aforesaid .

c — Nahr al-Malik

The third transverse canal was Nahr al-Malik (the king's canal) , which coincides in its upper course with the present Radwaniya , and with al-Yusifiya in its lower course . (57)

55) al-Mustawfi mentioned the village Sarsar but he did not mention the canal .

56) Ibn Serapion , op. cit . , P . 15

57) Sherif , op. cit . , PP . 41—42

Bewsher , " On part of Mesopotamia contained between Sheri'at al-Bytha on the Tigris to Tel Ibrahim . " J. R. G. S. vol . xxxvii , P . 172, 1887 .

Its point of origin was five leagues (about 15 miles) below the head of Nahr Sarsar , where a weir of limestone was constructed to raise the level of the river during the summer period , in order to supply the canal with enough water . (58) It flowed through 360 villages , which were famous for corn , palm groves and other products . (59) It continued by way of a bridge of boats called Jisr Kuthi , which was seven leagues from Baghdad (60) and was crossed by the Baghdad-Kufa highroad . Finally it flowed into the Tigris on its western bank three leagues (10 miles) below al-Madain . (61) According to al-Istakhri , (62) before the canal flowed into the Tigris , it divided into two canals , one of them continued to Kasr ibn Hubairah and the second joined the Tigris near Kuthi . This canal survived the Mongol conquest and it continued to flow , and its district continued

58) Sousa , " The Valley of the Euphrates and the Hindiya Dam Project " , PP . 78 - 85

The rocks were brought from the neighbourhood of Hit via the river .

59) Yakut, op. cit. , vol. 4B , P. 846

al-Kazwini , op. cit. , P. 185

Ibn Sa'id , op. cit. , P. 74 M. S.

60) Ibn Khurdadhbih , op. cit. , P. 185

al-Istakhri , op. cit. , P. 85

61) Ibn Serapion , op. cit. , P. 15

62) op. cit. , P. 85

to flourish , during the thirteenth and the fourteenth centuries .

Abu al-Feda did not give us more information concerning al-Malik canal than what has been said before . (63) Al-Mustawfi reported that there were still 300 villages and farms on both banks , which gave abundant produce , and the revenue of the district (Nahr Malik) amounted to 50,000 dinars . (64)

Nahr al-Malik was mentioned by al-Kalkashandi as a canal taking off from the Euphrates . (65) But it seems that its mouth gradually silted up and the canal became dry .

Nahr al-Malik is an ancient canal . According to Dinc-hes (66) it was mentioned in the year 2300 B . C . as Nar Sarri , canal of the king referred to in later inscriptions and known among the Chaldaeans as “ Nahr Malka ” . Its termination at the latter point , as well as the traditional name of Nahr Malka , seem to connect this cut with the Flumen Regium of Ptolemy which , according to Ammianus , was drawn from Perisaboras on the Euphrates . (67)

63) op. cit . , P . 53

64) op. cit . , P . 53

65) op. cit . , vol . 4 , P . 399

66) “An Early Mention of Nahr Malka”, p. 737, J.R.A.S. memxxii.

67) Fraser, op. cit . , P . 32

Sherif , op. cit . , vol . I , P . 56

Yakut (68) and al-Kazwini (69) reported that according to tradition it had been dug either by King Solomon or by Alexander the Great, while the true version, according to al-Mustawfi, (70) was that Sapur the grandson of Darius, who was known as Sapur the Great, caused this canal to be dug from the Euphrates to the Tigris and built villages on both banks.

It seems that Nahr al-Malik flowed through a valley between the hills of Felluja and those of Dahr al-Mijasa, which makes one believe that it was once a branch of the Euphrates in the ancient period.

d — Nahr Kutha

The fourth transverse canal was Nahr Kutha, which corresponds at least for its western part with the present Habl Ibrahim.

Its point of origin was three leagues (10 miles) below that of Nahr al-Malik. It was a wide canal watering numerous domains and villages. It flowed under a bridge of boats over which passed the pilgrimage road from Baghdad via Kufa. From Nahr Kutha branched several canals irrigating the sub-district (Tusuj) of Kutha which was of the district (Kura) of

68) op. cit., vol. 4B, P. 846

69) op. cit., P. 184

70) op. cit., P. 53

Ardashir Babkan . It also irrigated parts of the sub-district Nahr Juwair . (71) After passing by Kutha Rabba , it finally flowed into the Tigris , on its western bank , 10 leagues below al-Madain . (72)

This canal continued flowing during the Il-Khans ' dynasty . It was mentioned by Abu al-Feda as a canal derived from the Euphrates below Nahr al-Malik and after irrigating Sawad al-'Iraq it flowed into the Tigris below Nahr al-Malik . (73) But it seems that this canal did not survive very long after the Mongolian conquest , because there is no mention of the canal or of the lands on both banks or of its revenue in the tables of al-Mustawfi , We understand from Ibn 'Abd al-Hak that the Canal had silted up before he wrote his work , i . e . about 1345 . (74)

This ancient canal (75) was the eastern branch of the Euphrates when it divided near Sipar . Then it passed by Jabal Ibrahim and flowed through the ancient towns , Kuthi and Nipur , until finally it flowed into the Arabian Gulf . The

71) Yakut , op. cit . , vol . 4A, P . 317

Ibn Serapion, op. cit . , P . 16

72) Ibid .

73) op. cit . , P . 63

74) op. cit . , Tomus Primus , PP . 339, 219

75) According to Ibn 'Abd al-Hak « Tomus Primus P . 339 »
it was the first canal to have been dug in Iraq .

second branch flowed through Babylon . (76) Yakut asserted that this canal took its name from Kuth — grandfather of Abraham — who dug the canal . (77)

(4) The Canals of Shatt al-'Arab

Shatt al-'Arab is the Dijla al-'Aura or Fayd al-Basra of the Arabs . The tide from the Arabian Gulf came up Shatt al-'Arab as far north as Madhar and 'Abdasi , filling and draining the thousands of canals which branched from the estuary . Those canals differed in length and width and only some were navigable . Canals irrigated the lands on both banks of the estuary which were cultivated especially with palm-trees and which stretched more than 50 leagues between Madhar and 'Abbadan . (78)

In the neighbourhood of Basra , were more than 120,000

In the neighbourhood of Basra , were more than 120,000
or after the name of the place . (79)

Of these canals the following were the most important :

(1) **Nahr al-Maraa** (the woman's canal) . It began

76) Sousa , op. cit . , P . 80

77) op. cit . , vol . 4A, P . 317

According to Fraser p . 32 Kutha derived its name from Kush , the father of Nimrud .

78) al-Istakhri , op. cit . , P . 80

79) Others said that there were 124,000 canals in Basra ,
H. A. H. P . 121

two leagues from the exit of Nahr Abu al-Asad , and had been dug by Ardashir al-Asfar the Sassanid . (80)

(2) **Nahr al-Dayr** (the monastery canal) between Matara and Basra , being nearly 20 leagues from the latter . It took its name from a “ Dayr ” called “ al-Dihdar ” , which stood at the mouth of this canal , and a village of that name still exists . It was famous for the excellent procelain dishes which were manufactured and exported for sale to the other towns . (81)

(3) **Nahr Ma'kil** took its origin eight leagues from al-Dayr canal . It was an important waterway , by which ships reached Basra when coming from Baghdad . It was called after Ma'kil who dug this canal during the reign of 'Omar . This Canal and the fourth canal , the Ubulla , going from Basra towards the south-east , were each four leagues long and in joining each other formed a long navigable canal , and together with Shatt al-'Arab formed a large island .

The chief canals on the east side of the Basra estuary (the Persian side) were :

1 — **Nahr Bayan** , which represented the present Haffar canal by which the waters of the Karun river mainly discharged into Shatt al-'Arab . It was widened by 'Adud al-Dawlah the Buwayid .

80) Ibn Serapion , op. cit. , P. , 30

Yakut , op. cit. , vol. 4B , P. 844

81) Ibid ,

11 — Nahr Madhar , which was nearly six leagues long , from which minor canals led off to irrigate the bordering lands .

These canals survived the Mongolian conquest and the lands on both banks of Shatt al-'Arad continued to be productive during the following centuries , thanks to the tide which did the cleaing of the canals .

According to al-Mustawfi the orchards on Shatt al-'Arab extended for 30 leagues in length by two leagues in breadth . (82) Abu al-Feda mentioned several canals leading from Shatt al-'Arab such as Nahr al-Maraa (the Maraa of the 'Abbasids) , al-Dayr , Bathk Shirin , Nahr Ma'kil , Nahr al-Ubulla , etc . He added that there were more than 100,000 canals on the western bank of the estuary . According to him most of the canals were silted up and ruined and only one — twenty — fourth of the cultivated land of Basra and its dependencies was left in his time . (83) When Teixeira came to Basra he praised the orchards , cornfields and palm-trees which were all irrigated by trenches taken from Shatt al-'Arab . (84)

82) op. cit. , P. 45

83) op. cit. , PP. 56, 57 . His own words were :

ان البصرة وبلادها التي على الأنهر المذكورة قد خربت حتى لم يبق منها غير
قيراط واحد من ٢٤ قيراط .

84) op. cit. , P. 15

(5) The Canals of Baghdad

In order to supply water for the royal palaces and for the people of the new capital , Baghdad , and in order to irrigate the gardens and the vicinity and to link Baghdad with the different parts of the country , a system of perennial canals wide enough for navigation became essential .

Al-Mansur dug several canals from Nahr 'Isa and the Dujayl canal for western Baghdad , and later on , when the construction of eastern Baghdad was completed , several canals were dug from al-Nahrawan .

Some of these canals were wide , so they had to be spanned by bridges of stone or brick at the points where they were crossed , but other canals , although they bore the title of Nahr , were mere watercouse , partly open and partly carried underground , but all were narrow enough to be easily crossed . Some of these canals were navigable for big boats , while others were not so on account of weirs , dams and water-wheels . Trans-shipment of goods into smaller craft was carried out in special places . Most of these canals were used for irrigation without mechanical means , while in some cases , when the canals flowed at a low level , water-wheels (called Dullab) , were used . Moreover , these canals provided a line of defence against enemies who might try to attack the capital .

Baghdad , with canals flowing through its streets and gardens , was a veritable Venice of the Arabs . About 30,000 sailing boats frequented these canals .

Most of the subsequent canals were silted up in a short time , because they were narrow and shallow , and there was neglect in cleaning them . This made their silting up easy . In the year 369 A . H . (979 A . D .) , during the reign of 'Adud al-Dawlah the Buwayid , most of these subsequent canals were obliterated , so he ordered them to be re-dug . (85) When Yakut wrote his Geographical Dictionary , namely about the year 1226 A . D . no trace of most of the subsequent canals was left . (86) During the Il-Khan period two canals were mentioned as still flowing through western Baghdad , namely al-Sarat and Karkhaya .

al-Sarat : A little distance above al-Muhawal the 'Isa canal bifurcated , the left branch took the name al-Sarat and followed a course almost parallel to the 'Isa canal . After irrigating the fields and orchards on both banks , al-Sarat flowed into the Tigris in front of Basra Gate . (87) The Sarat

85) al-Duri , op. cit . , PP . 268 - 9

86) Yakut , op. cit . , vol . 4A , P . 252

87) al-Kazwini . op. cit . , P . 182

Ibn 'Abd al-Hak , op. cit . , Tomus Primus , P . 339

According to Yakut , this canal was dug by the Sassanids , which is true . al-Mansur asked the advice of those who living at the same place where Baghdad was constructed . They said : " The—

canal bifurcated at a distance of one league from its point of origin ; the left branch — the “ Trench of Tahir ” — flowed to the north of western Baghdad and joined the Tigris at a place called al-Fardah , “ the harbour ” . (88)

al-Karkhaya canal : At a point about a mile below al-Muhawal the Karkhaya canal led off from the 'Isa canal and , after irrigating the fields on both banks (because the buildings were ruined and replaced by farms) , it finally discharged the remainder of its water into the ,Isa Canal at a place close above al-Fardah , where the , Isa canal discharged into the Tigris . (89) Presumably these two canals silted up and were ruined as a result of the silting up and neglect because there is no mention of them after the 14th century .

There is no mention of the canals of eastern Baghdad which must have fallen into disuse when al-Nahrawan canal silted up . A ditch surrounding the town was mentioned by an anonymous German traveller in 1350 A . D . and accor-

city being on the Sarat canal provisions will be brought by boats from the Euphrates”. Yakut, op. cit . , vol . , 3 , P . 378

88) Ibn Sa'id , op. cit . , P . 74 M. S.

Ibn al-Jawzi , “ Manakib Baghdad ” , P . 8

al-Hasani , “ 'Omran Baghdad ” , PP . 13—14

89) Ibn Serapion , op. cit . , PP . 25—26

al-Khatib al-Baghdadi , op. cit . , PP . 65—67

Yakut , op. cit . , vol . 4A , P . 252

Ibn 'Abd al-Hak , op. cit . , Tomus Primus P . 485

ding to him , it was full of " dirty water " . (90)

The frequent revolts and civil wars and the neglect of the cleaning of the canals during the Il-Khan and the subsequent dynasties caused the gradual silting up of the canals . Nevertheless , several sultans , such as Ghazan Khan , and local governors , dug new canals and tried to clean some of the ancient ones , but still this was a local weak effort . The country needed comprehensive reform and complete devotion to the welfare of the people in order to bring back the lost prosperity . 'Ala al-Din al-Juwaini (who was a governor between 1266 — 1282) dug a canal from al-Anbar to Nejef and spent 100,000 golden dinars in order to cultivate the land on both banks of the canal . (91)

Three canals were dug , or perhaps widened and deepened , during the reign of Ghazan Khan . A canal was dug from the Euphrates to the tomb of Husain to irrigate the dry plain of Kerbala . This canal was known as the higher canal of Ghazan to distinguish it from another which Ghazan ordered to be dug from the Euphrates to the tomb of Shaikh Abu al-Wafa and which was known as the Lower Canal of Ghazan . A third canal was dug from the

90) Rohricht and Meisner , " Ein Niederrheinscher Uber Den Orient . " *Zeitschrift fur deutsche Philologie* , vol. 19, P. 59

91) This canal apparently corresponds with Kari Si'da .

al-'Azzawi , op. cit. , vol. 1; P. 310

Euphrates to the north of Hilla and called simply al-Nahr al-Ghazani . (92)

In the year 775 A . H . (1373) Prince Isma'il dug the canals of Baghdad and cultivated the lands on their banks . When Sulaiman the Magnificent (the Ottoman) conquered Baghdad he cleaned some of the canals and repaired the dams on the banks of the rivers and the canals and ordered a canal to be dug from the Euphrates to Kerbala which was called al-Nahr al-Sulaimani and later on became known as al-Husayniya . (93) It seems that this canal silted up because when Teixeira passed by Kerbala he mentioned a canal and said it was dry and the people were cleaning it . (94) As we have seen very few attempts were made during three centuries to dig or clean the canals and consequently we expect to find them silted up and the whole irrigation system destroyed .

92) Ibn al-Futi , op. cit . , P . 497

Ibn Taktaka , op. cit . , P . 301

al-Azzawi , op. cit . , vol . 1 , PP . 382 , 391

Howorth , op. cit . , part III , P . 543

al-Ghayath , " Kitab Tarikh al-Ghayathi " , P . 146

93) Seton Lloyd , op. cit . , P . 192

Serkis , " Maa al-Nejef Fi al-Kurun al-Akhira " , M. Z. I. ,
vol . I , P . 192

al-'Azzawi , op. cit . , vol , 4 , P . 36

94) op. cit . , P.33

3 — Conclusion

Iraq was basically an agricultural country , and agriculture depended on a comprehensive irrigation system .

The 'Abbasids inherited the Sassanid irrigation system and tried their utmost to keep it in good condition .

The irrigation system , in brief , was a long canal (al-Nahrawan) at the eastern side of the Tigris and a lesser system of canals derived from the western bank of Tigris above Baghdad , namely al-Ishaki and al-Dujayl .

Four irrigation canals which in part drained the Euphrates into the Tigris were the 'Isa canal , Nahr Malik and Nahr Kuthi . These were linked by thousands of smaller canals .

The decline of the irrigation system started in the tenth century the canals silted up as a result of neglect , because the governors were occupied in civil wars . Moreover , great amounts of sediment were carried down by the rivers during the flood season . We find that in the 13th century the Tigris had changed its course to the north of Baghdad , the Nahr-awan canal was ruined and most of the canals of Baghdad silted up . In fact the decay of the irrigation system was already well established since the sixth Century A . D . (during the

Sassanid period) . The Chosroes were occupied in civil wars and neglected the irrigation system , and thus the Tigris changed its course .

The Mongols conquered Iraq and we have no tangible proof that they destroyed the irrigation system . We can blame them because they neglected for a long time the cleaning of the canals . Several canals survived the Mongol conquest , but decayed gradually .

The frequent changes of dynasties , revolts and civil wars , in addition to the huge quantity of silt carried by the Tigris and the Euphrates , were the main reasons for the decay of the irrigation system .

CHAPTER - 5

Agriculture

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1 — Introduction

Iraq is a fertile land , in which agriculture has always been the backbone of its economy .

The unique wealth of this land was the goal of all conquerors and its possession the crown of their conquests . In the seventh Century A . D . , the Arabs overthrew the Persian government . They kept the land in the hands of the previous owners and encouraged the people to cultivate their land . Those who left their land uncultivated were punished by having it allocated to others . They introduced new plants , such as al-taifi grapes , cotton and citrus .

During the first two centuries of the 'Abbasid era , they almost restored the fertility of the country . The 'Abbasids introduced a new divan (1) (called divan al-Akriha) to supervise the cleaning of the canals , the digging of new ones , and the maintaining of the dykes and protection of farms and farmers from shepherds . The prosperity of the country reached its climax during the reign of Harun al-Rashid and his son al-Mamun , but there after it steadily declined . Most of the canals silted up , the river Tigris changed its course to the north of Baghdad , and tribalism dominated the country . Moreover , the high land —tax

1) Divan was a department in the administration of the Islamic and the Mongolian periods .

caused the farmers to desert their lands and most of the cultivable area was left desolate .

During the Mongolian period the Il-Khans tried their utmost to bring back the prosperity of the country ; thus they encouraged cultivation . The governors of Iraq , and in particular 'Ala al-Din , devoted themselves to restoring the country to prosperity . When Ghazan Khan came to power he gave the public domains — which had been waste for a long time — to anyone who would undertake to till them , without levying any charges for the first year and in the second only a third , one half or two—thirds of the ordinary charges . A special divan was appointed to lease the crown lands and fix the taxes which were to be paid . Moreover , the deserted lands were given to anyone who cultivated them . Ghazan ordeered that part of the land tax paid by each farmer was to be devoted to buy oxen , seed and other necessities for agriculture and each farmer of taxes was to give a written assurance that the oxen would be used in his own province and to encourage agriculture . Ghazan also fixed the land —tax and asked the Kadis and governors to write the new assessments on paper and hang it in the mosques , so that everyone knew how much he must pay . During the following dynasties several attempts to encourage agriculture were made by the sultans or the governors , such as Sultan Owais the Jalair and Kara Yusuf.

In 1488 A . D Sultan Ya'kub ordered that any loss or deficiency which might result to the crop from the stay of the army should be compensated from the royal revenue when the financial agents would be making accounts (Muhasaba) . But it seems that the frequent changes of dynasty , civil wars , revolts of local governors , the silting of the canals and also the natural factors such as drougths , floods and locusts , acted together to bring about the decay of the wealth of the country .

2 — Administration

Iraq was occupied by several powers in different periods and they all contributed to the development of different agrarian systems . Land was an important source of revenue , and all these powers were interested in extorting as much money as they could . In some periods much attention was paid to the land and to the welfare of the people ; in others little attention , if any , was devoted to either .

Land tenancy and land administration in Iraq , however, have undergone numerous changes which it is necessary to discuss .

(a) Land Tenure

Very little is known about the development of land tenure in Iraq in its early historic times . It is possible ,

however , that the land was originally considered to be the property of God and the citizens were tenants . We understand from different records that there were several categories of ownership :

1 — Private ownership .

2 — Religious ownership .

3 — Tribal ownership . (2)

It seems that lands were granted either to individuals or to groups , of different classes of craftsmen and labourers . Military fiefs were also known to the Babylonians . Those fiefs were strictly hereditary and the conditions by which they were hold regulated by the code . If , however , the land had been neglected and another person tilled it , the code laid down that it should pass into the latter's hands after three years . (3)

During he Sassanid period the land was considered to be the property of the government . The tenants paid al-Kharaj (4) on their land and tribute to their heads . Nevertheless there were private properties , either belonging to the king

2) S. Khesbak, " The Kurds of Sulaimaniya Liwa ", P. 33

According to Clay P. 17 the tribal system of land rights was introduced into Babylonia during the Kassite period .

al-Nahi Salah, " Mukadima Fi al-Ikta' wa Nidam al-Arādi Fi al-Iraq " , P. 8

3) Clay, op. cit . , P. 13

4) Kharaj. Literally means revenue derived from a piece of land .

and the royal family or to the dihkans (the landlords) who perhaps had been granted these lands for their services .

The theory of Islam was , from the commencement , that land that had been conquered became the possession of the conquerors . It was considered as a common property of the Moslems , and whatever revenue the lands yielded was spent in promoting the cause of Islam . After conquest, the soldiers asked the caliph , 'Omar , to divide al-Sawad among them, according to the general rule of war at that time the loot was to be divided among the soldiers , and because al-Sawad was taken by force , so it must be divided among them . The caliph , 'Omar , refused their request and settled it as a common property of all the Moslems , and kept it under the responsibility of those who were cultivating it before the conquest . The ground of the caliph's decision was that , if the entire land was divided among those who were present nothing would be left for the others who came later . (5)

Four million jaribs (6) in al-Sawad (called al-Katai ' or al-Sawafi) , were granted by 'Omar and the other caliphs to the Companions of the Prophet and to some others who were selected for their services or relationship , or for the

5) Abu Yusuf , op. cit . , P. 14

6) The jarib was an ancient Babylonian measure . Ten jaribs equal about three acres , The jarib was 60 Dhira' by 60 . The Dhira' was equivalent to 62 centimetres .

interest of the state . These were of different categories .

(1) Lands of those who were killed during the war or had fled from Iraq and joined the enemy .

(2) Lands of the Chosroes , his family or his supporters .

(3) Dead land , barren land and the suburbs of the different villages . (7) The dead lands were granted on condition that they were reclaimed and tilled . The titles of these lands were transferred to the developers . If the land was left fallow for three years , the right was forfeited and had to be given to another one . (8)

“ Al-Sawafi ” were given as concessions of usufruct (Ikta ' Ijar or Intifa ') . Then in the civil war of Ibn al-Ash 'ath (702 A . D .) the archives were destroyed and each took the land for which he was responsible . (9)

During the 'Abbasid era , the system of administration in general and of the land matters in particular was unsatisfactory . The 'Abbasid caliphs succeeded the Omayyad dynasty . They accordingly took what had belonged to the Omayyad Caliphs and added new reclaimed lands to their property . At the same time a new divan was created called the confi-

7) These village suburbs were granted only on condition that they belonged to nobody, were not occupied by a cemetery, nor used for grazing cattle or supplying firewood . Abu Yusuf , op. cit . , P. 36

8) Those reclaimed lands theoretically were neither sold nor taken from their owners and given to others . Ibid , P. 34

9) al-Dahir, “ Fief and Administration in Iraq ”, P. 3

scating divan (or divan al-Musadarah) . (10)

This divan gave to the caliphs the right to confiscate the lands and properties of anyone , regardless of rank , who opposed them . As a result of the high land-tax , and in order to get rid of the oppression of the bailors , the farmers registered their lands in the name of princes or other members of the royal family and became tenants . In a short time the 'Abbasid caliphs and their families acquired most of the lands . They were classified as follows :

1 — al-Diya' al-Khasa (the personal property of the caliph) .

2 — al - Diya' al - 'Abbasiya (the property of the 'Abbasids) .

3 — al-Diya' al-Mustahdatha .

4 — al-Diya' al-Furatiya . (11)

The work of Abu Yusuf (the chief judge of the Caliph Harun al-Rashid) , showed that the state interest in land was restricted to the payment of rent . Property could be bestowed upon , but not transferred to anyone else so long as the first vassal had heirs who could become responsible for its management . If the land was left fallow , the right was forfeited . He gave the right to the caliph to dispose of the barren lands , the lands without owners , the islands

10) Hitti , op. cit . , vol . 2 , P . 395

11) Zaidan , op. cit . , vol . 2 , P . 132

in the rivers and the dead lands . They were granted on a condition that al-Kharaj was paid (12) In fact , those lands were only given to the princes , generals , officers , bodyguards and to the civilian members of the official classes . At the same time the state lands were also given to courtiers and soldiers . The generals graduall acquired such a hold over property (especially during the reign of al-Mu'tasim and later) , that the caliphs and the government became playthings in their hands , and as a natural result the peasants fell into misfortune and poverty .

During the Buwayid era (10th century) , the land was divided amongst the troops , and the tenure was given to whoever paid (13) This act paved the way for feudalism . (14) This became more serious during the Seljuk period (11th century) when Nidam al-Mulk divided the land among the

12) Abu Yusuf , op. cit . , PP. 33 , 35

13) Mu'iz al - Dawlah , the Buwayid , tried to form military fiefs to bind the soldiers to the land . The result was the destruction of the irrigation system and agriculture at the same time , because the government was too weak to control the soldiers .

al-Duri , op . cit . , P. 255

14) This act was the origin of feudalism in Iraq , which is still the fundamental feature of the land tenure system . While few chiefs and landlords control vast areas of fertile land , the great majority of the peasants are working as share-croppers under severe conditions of employment and exploitation .

generals to bind them to the land . He gave to each "Mukta" (or concessionaire) one or more villages according to his pay . (15) This system of Ikata'at continued until the Mongol invasion .

Towards the end of the 'Abbasid era (13th century) five categories of land property existed , viz : —

(1) The 'Abbasid estates which belonged to the caliph , princes and members of the royal family .

(2) Lands granted under special conditions :

(a) Undeveloped lands granted by the caliphs on the condition that the receiver would reclaim and develop the land .

(b) Lands granted to civil and military officials who were willing to accept the return from the land in payment for services rendered . The title for such lands remained in the name of the government . The area of this category of lands increased as a result of the silting up of the canals and the destruction of the irrigation system . It became the main problem during the Mongolian period .

(3) Private lands , which included lands purchased from the caliphs and princes or granted to be reclaimed .

(4) Wakf lands which had been presented by their

15) The generals had full independence in their lands . Their relation with the Seljuk Sultans was not more than paying an amount of money as a tribute at the end of each year .

legal owners to be held in trust for public or private benefits . (16)

(5) Musha' lands or public domains which were the state lands and their use was common to the public , such as roads and pasture lands . (17) The Mongols left the system of land tenure as it was before the conquest . The wakf lands were placed under the Supervision of "Sadr al-Wukuf to supervise the property and spend the money for the proper purpose . (18)

16) The Wakf land had its origin from the Verses in the Koran and teachings of the Prophet , encouraging Moslems to present part or the whole of their property *Fi sabil illah* " for the sake of God " The caliphs and pious Moslems built mosques , hospitals , libraries and wells for the benefit of the people and presented their lands and property for their upkeep . The properties were inalienable , thus they were called Wakf , or *habs* , meaning immobilized . The Wakfs were divided into the following classes :

1. Those of the mosques , whether for their perpetual maintenance , or for the support of the ministers who performed services in them .

2. The public Wakfs , which were destined for the support of the poor and the general good of the nation . They consisted of inns , fountains , wells , hospitals , schools , public libraries, bridges , allowance of food for the poor , etc ,

D'Ohsson , *op. cit.* , PP. 570, 580 & 586

17) 'Ali , H. M. , " Land Reclamation and Settlement in Iraq " , PP. 55 , 56 .

18) Ibn al-Futi , *op. cit.* , P. 478

al-'Azzawi , *op. cit.* , vol . 1 , P. 544

The main problem of land tenure during the Il-Khan period was the increase of the waste-lands as a result of the continuous silting—up of the canals and the desertion of cultivation as a result of the high land tax . Grants from waste lands continued as they were during the 'Abbasid period . In order to arrange these grants (ikta'at) a special divan , called divan al-Mukata'at was established . (19) Another divan was established to lease the crown lands . In regard to the land in private hands , it was announced that those which had been deserted for a long time might be cultivated by anyone . (20)

In a decree (1303 A . D .) Ghazan Khan introduced the hereditary military fiefs in the country . He decreed that lands belonging to the royal family or to the state or to the public domain , whether cultivated or uncultivated , must be distributed to the soldiers instead of their salaries . (21) In addition to these fiefs he gave the

According to al-Kalkashandi . " vol . 4 , pp. 331 - 2 " , the Mongols left the wakf land under the inspection of their previous guardians " mutawlin " and the ruin of these lands was due to their guardians " superior officers called Nadir " .

19) Ibn al-Futi , *op. cit.* , pp . 478 - 9 .

20) Rashid al-Din , " Jami' al-Tawarikh " , pp. 513 - 516 .
Howorth , *op. cit.* , part III. p. 510 .

In this way, the Il-Kans applied the Islamic law as far as the dead land was concerned .

21) Rashid al-Din , " Tarikh Mubarak Ghazani " , p. 307 .
Haider , *op. cit.* , p. 150 ,

soldiers seeds , buildings and oxen , and said that they must have enough straw and barley to keep a few horses fit and healthy , whenever need might arise .

These fiefs were not to be sold , given or transmitted to friends or relatives , nor given up as a marriage settlement or in any other way , on pain of death . (22)

If the landlord died or migrated , his fief was given to one of his sons , and if he had not got a son then his “ ghullam ” (servant) became the guardian of that land , but even if there was no ghullam , then a qualified person was appointed from among those who were responsible for a hundred men ; if they did not find a qualified person among them , then the land should be registered in the name of somebody else . (23) The possession of a fief was conceded for a period of three years , at the end of which an inspection of the province was carried out . If the land was found to be in a flourishing state and the peasants were happy , the fief was renewed for another three years . If , on the other hand, the peasants were complaining , the fief was withdrawn and was not to be touched for three years . (24) There were several registry books , one for each class , such as those who were responsible for 100 soldiers , 1,000 and 10,000 men .

22) Belin , op. cit . , P. 219 .

23) Rashid al-Din, op. cit . , P. 208 .

24) Belin, op. cit . , P. 221 .

Haider , op. cit . , P. 152 .

So the property of each was known , and no one would attempt to acquire anyone else's lands . (25) The tribal chiefs were recognised as Amirs and their habitations were granted to them as fiefs . Some tribal chiefs were granted cultivated lands outside the tribal habitations . Thus Khud-abendeh granted Hilla , the Furatiya districts , as a fief to

25) Rashid al-Din , op. cit . , pp. 208 - 9 .

Besides the above conditions , others were taken into account as well , such as ;

a . The tenants on a land shall pay to the soldiers the land-tax in cash or in kind which they used to pay to the treasury .

b . The soldiers were not to appropriate land or water belonging to Private people or to the pious foundation "wakf" .

c . The soldiers have no right over the Peasants other than to see that they cultivate the land and receive the land-tax .

d . The soldiers were not to usurp the villages neighbouring upon their fiefs on pretence of obtaining water there , and they had to leave enough pasture for their cattle , donkeys and sheep .

e . The landlords must not accept any tenant who migrated from another fief .

f . In regard to ruined villages and untilled lands belonging to the public domain which were comprised within their territory and the soil of which had become grass-grown , they were to cultivate a portion of it themselves , and to cause the rest to be cultivated by their slaves and servants . They were to employ their oxen and seed and to claim what product the land might give .

Howorth , op. cit . , part III , p. 598 .

Muhana (the chief of the Fadl tribe , a section of Tai) . These fiefs were further extended in 1312 to include the whole of lower Iraq . (26)

The system of land tenure established by Ghazan Khan was preserved during the following dynasties , namely , the Jalairs , (27) Timur the Lame , the Kara Kuyunlu and the Ak-Kuyunlu . But it seems that the system of land tenure became so unsatisfactory that the revolution of al-Musha'sha' enjoyed great popularity , especially after he announced that he was going to distribute the lands among his friends and attendants . (28)

The Ak-Kuyunlu adopted the system of grants of lands instead of payments (a system which was practised in Iraq since the 10th century A . D .) . These grants were meant to be temporary but those who received them apparently kept the lands . (29) Towards the end of the Ak-Kuyunlu rule and during the Safawid occupation (1508 — 1534 A . D .) the government was too weak to control the tribes who managed to assert their rights in the lands they occupied and held by force . (30)

26) Al-'Azzawi , op. cit . , vol . 1 , PP. 428—9 .

Haider , op. cit . , PP. 152 - 3 .

27) Hafid Abru , " Dhail Jami' al-Tawarikh " , P . 160 .

28) Al-'Azzawi . op. cit . , vol . 3 , P . 111 .

29) Minorsky , " The Ak-Kuyunlu and Land Reforms " , P . 449 .

30) 'Ali , H . M . , " Land Reclamation and Settlement in Iraq " , P . 56 .

The Ottomans conquered Iraq in 1534 . According to a law adopted by the new conquerors , all conquered land belonged to the Sultan , who held it as a trust from God . Ottomans thus abolished the previous land tenure scheme , and Sultan Sulaiman ordered a comprehensive survey of the country . The Miri lands (crown lands) and al-Wakf were registered in 970 books which became the main reference to the land administration and tenure in Iraq during the Ottoman occupation . (31)

(b) Land Revenue

In order to appreciate the subject of land revenue , it is necessary to trace earlier systems of taxation .

During the Sassanid period taxes were divided into two categories , namely land—tax and personal or poll—tax . Land — tax was proportional — it fluctuated between one-sixth and one — third of the value of the produce according to the productivity of the land and its proximity to the town . Kubadh , who reigned from 488 — 531 A . D . , ordered a comprehensive survey of the land and assessed fixed amounts of taxes , either in cash or in kind .

31) Al-Azzawi , op. cit . , vol . 4 , P . 36 .

Table 1

The tax on the agricultural products during the Sassanid period .

Area and Kind of Product	Revenue in "Dirhams" (32)
One Jarib of Wheat or Barley	1 Per Annum
One Jarib of Vineyard	8 : :
One Jarib of Rice	5/6 :
One Jarib of Alfalfa	7 : :
(Every four Persian Palm trees (or for six Olive trees	1 : :

The Moslems asked 'Omar to distribute the land between them , but he refused and placed it under the regime of al-Kharaj and imposed tribute on the people .

The lands reclaimed by Moslems , together with the lands whose owners converted to Islam , and "al-Katai" (33) were placed under the regime of al-'Ushr .

The word Kharaj literally means the revenue derived from a piece of land , while technically it denotes the tax

32) Al-Mas'udi , op. cit . , vol . 2 , PP . 204 - 5 .

Dirham literally means a round silver coin .

33) Al-Katai « singular Katia » were the lands left by their owners during the war between the Sassanids and the Arabs .

imposed on land . (34) Its origin was that people acknowledged that cultivated land belonged to God or the caliph and the people were tenants , thus al-Kharaj was the rent of the land .

Al-Kharaj was of two kinds : the proportional (Kharaj-al-Mukasama) and fixed (Kharaj Wadifa or Muwadaf) .

The proportional Kharaj consisted in a proportion of the produce of the ground , but never less than one — fifth , while the fixed Kharaj was in kind or money or both , and was based on the area .

The Kharaj was assessed in relation to the tax — bearing capacity of the land , which , according to al-Mawardi , was affected by the following factors : —

- 1 — The quality of the land .
- 2 — The kind of crops .
- 3 — The method of irrigation . Crops that had been irrigated with water raised by wheels or other artificial methods could not stand the same of Kharaj that could be charged on land irrigated by running water

34) According to Houtsma " vol . 2 , P . 902 " , the Arabs borrowed the word Kharaj from the administrative language of the Byzantine-Greek , probably XOPYRRO , which originally meant the tribute in a general sense to which unbelievers in Moslem countries were liable . " This is wrong because al-Kharajiya land paid al-Kharaj even if it was owned by a Moslem or if the owner was converted to Islam " .

or rain . Some might add a fourth factor , namely the distance of the land from the cities and markets , because the price increased or decreased according to **this** distance .(35)

'Omar sent 'Abbas Ibn al-Ahnaf and Hudhaifa as tax — collectors and as assessors . 'Abbas Ibn al-Ahnaf assessed each jarib of palm — trees at eight dirhams , vine at six dirhams , sugar — cane at six dirhams , wheat at four dirhams and barley at two dirhams . All assessments were endorsed by 'Omar . (36)

Lands originally cultivated by Moslems were liable to the 'Ushr , (37) which differed according to the way of

35) al-Mawardi , " al-Ahkam al-Sultaniya " , P . 142 .

36) Ibn Rustah , op. cit . , P . 105 .

al-Makdasi , op. cit . , P . 133 .

According to al-Baladhari p. 269 each jarib of palm-trees and vines were assessed at 10 dirhams ,

37) According to Gibb vol. IV , p. 1050, 'Ushr is the same as the Assyrian ish-ru-u which means tribute paid in kind " corn and dates " , or in gold and with the Hebrew Maesher , the tenth which the sanctuaries received but which was also levied by kings and the Mosaic law wished to introduce as compulsory . The lands which were liable to the tithe were :

a . Lands reclaimed by Moslems .

b . Lands whose owners were converted to Islam .

c . Lands conquered by force and divided between the Moslems . While the lands liable to al-Kharaj were those lands settled by an agreement between the Moslems and the owners were Kharajiya lands and the Kharaj never lapsed even if the owners were converted to Islam .

Zaidan , op. cit . , vol . 1 , p . 173 .

irrigation ; for example , whether by wheels or flush irrigation . Thus one — tenth was due on land irrigated by rain or flush irrigation and one — twentieth on what had been irrigated with buckets or waterwheels . (38) 'Ushr was payable on barley , maize , wheat , peas , rice , millet and sesame . The revenue that was collected was used for the equipment of soldiers for war , the payment of the tax — collectors and the support of Moslems of Mecca and Medina and the needy Moslems . (39)

Even if the land was cultivated more than once per year , the tax was collected only once , and if the products were injured by a plague , heavy rains or floods , the farmer would be exempted from paying the land—tax .

Under the rule of Mughirah ibn Shu'ba , products other than those already mentioned , such as Indian peas , sesame , together with grapes and ratabah (cucumber , melons , clover , etc .) , became liable to the land—tax and were assessed at eight dirhams per jarib , excluding palm—trees . (40)

During the reign of 'Abdul — Malik the Omayyad , the following assessments were concluded in al-Jazira and Mosul

38) al-Mawardi , op. cit . , p. 113 .

39) al-Baladhari , op. cit . . pp. 266, 268 .

Abu Yusuf , op. cit . , pp. 13—14 .

40) al-Baladhari , op. cit . , p. 447 .

namely : one dinar (41) on a hundred close jaribs cultivated with seeds or two hundred distant jaribs . Furthermore , he assessed at one dinar every thousand close vine trees and at one dinar every two thousand distant trees . Besides the aforesaid products he assessed at one dinar every one hundred close olive trees or two hundred distant trees . (42)

At the time of the conquest until the early 'Abbasid caliphate , the Kharaj was mainly fixed in kind or money or both , on the area . As a result of the general fall in prices the Kharaj became so heavy that it exceeded the value of the whole produce . (43) Thus the Moslems of al-Sawad asked al-Mansur to take part of the produce as a tax (Kharaj al-Mukasama) . Al-Baladhari reported (44) that al-Mansur was about to change the fixed land—tax into a proportion of the produce , but death intervened .

Al-Mahdi , the third 'Abbasid caliph , changed the fixed Kharaj then prevailing into a proportional Kharaj , taking one —half of the gross produce on land irrigated by canals ,

41) Dinar literally means a round gold coin .

42) The terms used by Abu Yusuf قریب "near or close" and بعيد "far or distant" . قریب covered anything up to one day's march while بعيد referred to anything further away.

Abu Yusuf . op. cit . , p. 24 .

43) al-Mawardi . op. cit . , p. 168 .

44) op. cit . , p. 271 .

and one — third to one — fourth on land irrigated by buckets , but he left palm — trees , vine trees and the other fruit trees as they were before , viz : fixed Kharaj . (45)

Al-Kharaj was collected at the “ Nawruz ” (in spring) as it was during the Sassanid period . During the reign of al-Mutawakil (847 A . D .) al-Kharaj was collected after the harvest (46) and after the year 893 A . D . al-Kharaj was collected on 11th June . (47)

In order to collect the land-tax several methods were followed During the first century of the Islamic era , the government taxes were collected by salaried public officials 'Ummal al-Kharaj . Then farming the tax (Daman , also called iltizam) was practised during the last years of the Omayyad era and continued throughout the 'Abbasid caliphate Abu Yusuf advised the caliph to stop this practice and condemned it on the grounds that the bailors would oppress the farmers . (48) He permitted the auction method in one case , in

45) Ibn Taktaka , op. cit . , pp. 163—4 .

al-Mawardi , op. cit . , p. 168 .

46) Zaidan , op. cit . , vol . 11 , p. 125 .

47) Abu al-Feda , “ al-Mukhtasar ” , vol . 2 , p. 60 .

Before the year 847 al-Kharaj was paid in April , before they product was ripe and harvested , thus the farmers complained because they had not the money to pay if the tax was in cash, so they used to borrow money from usurers .

48) The auction method of collecting the farm taxes was one—

deference to the desire of the farmers , on condition that the government appointed someone as a supervisor . If the bailors oppressed the farmers , the supervisor would get in touch with Divan al-Kharaj at once , but the practice did not stop . (49) Later on officers , soldiers , Kadis and officials acted as tax-collectors .

During the Mongolian period the Il-Khans preserved the Islamic system of taxation . The 'Ushriya land still paid the tithe and the Kharajiya land paid the Kharaj which varied from one—tenth to one—half of the produce . (50) The Kharaj was proportional . The method of farming the tax followed by the Mongols was " Nidam al-Iltizam " or " al-Daman " which was followed during the 'Abbasid caliphate . (51)

The land-tax was paid either in kind or in cash as it

of the reasons for the ruin of most of the cultivated lands, and the neglect of cultivation . For those farmers of the revenues oppressed the people , and hurt and plundered them in order to get the money they paid the government and also a profit for themselves .

49) The 'Abbasid had a special Divan called Divan al-Kharaj, to supervise the collecting of the taxes and to arrange the spending of the money for the welfare of the people .

Hitti , op. cit . , vol . 2 , pp. 366 , 396 .

50) Ibn Taktaka , op. cit . , pp. 164 . 198 .

Haider, op. cit . , p. 152 .

51) Ibn Taktaka, op. cit . , pp. 164 , 198 .

al-'Azzawi , op. cit , vol . 3 , pp. 395—6 .

had been during the 'Abbasid period . In 1297 the farmers complained to Sultan Ghazan because Jamal al-Din al-Dastjrdani obliged them to pay in gold . Ghazan Khan accordingly ordered that the land -- tax must be paid in kind or in cash in the same way as it had been since the conquest . (52)

When Ghazan came to the throne (1295) he found the revenue so corruptly administered that practically nothing reached the government , and the farmers were so oppressed that they deserted their lands and migrated . Moreover taxes were sometimes increased by governors such as Sadr al-Din , who doubled the land-tax and obliged the people to pay al-Kayjur (or al-Kapjur) . (53) Accordingly Ghazan took away from the governors the rights of levying the land - tax and all irregular land - taxes were forbidden on pain of death . He also sent a tax assessor to each province , who was required to draw up a report on the land - tax at the last census , taking care that it should be moderate . In this way every farmer knew how much was expected

52) Ibid . , vol . 1 , p . 376 .

53) al-Kayjur " or some times pronounced al-Kapjur " was the tax on grazing lands . This tax was introduced by the Mongols , because grazing lands were exempted from taxes during the 'Abbasid period .

Minovi and Minorsky , " Nasir al-Din , Tusi on Finance . " , B. S. O. A. S. vol . X , p . 782 , London 1940—42 .

Boyle , J. A. , " Studies on the Jahan Gusha of the Juwaini " , Glossary , p . 18 .

from him , so no abuse was permitted . (54) Ghazan also abolished the farming method of collecting the taxes . (55)

The land tax was proportional and those places which had paid their taxes in kind or in cash were to continue as they had been accustomed . In addition , every village had to provide a fixed revenue in kind from wheat or barley . The villagers had to take the grain on beasts at the harvest time (56) to a granary located within the neighbourhood and get a receipt as a recognition of its delivery . The time within which it was to be done was 20 days . (57)

In 1335 al-Mustawfi was in charge of the tax office . According to him part of the assessments of 'Omar (the second legitimate caliph) were still in practice in Iraq and were known as Kharaj --i -- ratib (Permanent impost) . In addition , new assessments came into being , known as casual impost (Hadith) . According to him , of the summer and winter crops about one — third (of the produce) was paid to the treasury , another third (approximately) known as “ Bani ” was used for the expenses of cultivation and similar charges ; and the remaining third was for the occupier . We also understand from him that

54) Rashid al-Din , “ Tarikh Mubarak Ghazani ” , p. 260 .

55) al-'Azzawi , op. cit . , vol . , p. 395—6 .

56) Howorth , op. cit . , part III , p. 500 .

57) Rashid al-Din , op. cit . , p. 265 .

part of the revenue belonged to the treasury and part to the individuals (perhaps as salaries) . (58)

The revenues of Iraq in 1335 were 3 , 000 , 000 currency dinars , or 18 , 000 , 000 dirhams .

Table 2
Al-Kharaj of 'Iraq between the 7th and the 14th centuries

Period		Land — Tax (or Kharaj) Dirhams .
1 — 'Obaid Ullah Ibn Ziyad	681 A . D	135 , 000 , 000
2 — Al-Hajjaj Ibn Yusuf	704 A . D	18 , 000 , 000 (59)
3 — 'Omar Ibn 'Abdul-'Azziz	717 - 720 A . D	124 , 000 , 000
4 — Harun al-Rashid	786 - A . D	133 , 000 , 000
5 — Al-Mamun	813 - 833 A . D	104 , 000 , 000
6 — Al-Mu'tasim	833 - 842 A . D	114 , 000 , 000
7 — Al-Musta'in	862 - 866 A . D	84 , 000 , 000
8 — Al-Muktadir	908 - 932 A . D	49 , 000 , 000
9 — Abu Sa'id (The Il-Khan)	1335 A . D	18 , 000 , 000 (6)

58) op. cit . , p. 47 .

59) This was an extraordinary year during which civil wars were everywhere and the peasants left their lands because of the high taxes .

60) al-Bashari , op. cit . , p. 143 .

Yakut , op. cit . , vol . 3 , pp. 164—5 .

al-Mustawfi , op. cit . , pp. 35—36 .

Zaidan ' op. cit . , vol . 2 , pp. 53—5 .

Sousa , op. cit . , p. 239 .

The above table shows a gradual reduction of land tax , starting from the year 842 , due mainly to the silting and the ruin of the irrigation system . The reduction of land-tax between the years 932 and 1335 was 40 per cent (61) , 59 per cent being brought about between 842 and 908 . This latter high percentage is quite striking , for it took less than one century to bring it about , whereas it took about four centuries to bring about the former reduction .

The land tax in 1335 was 3 , 000 , 000 dinars . It was collected from the following :

Table 3

Al-Kharaj of 'Iraq in the year 1335

Towns and	Revenue
Their Dependencies	Dinars
Isa canal district (al-Mustansiri)	876 , 000
Baghdad	800 , 000
Wasit	448 , 000
Basra	441 , 000
Tarik - i - Khurasan	164 , 000
Kusan	94 , 000
Dakuk	78 , 000
Bandanijin	76 , 000

61) The dirham of the Mongols was 1/6 of the dinar , while that of the 'Abbasids fluctuated between 1/10 or 1/15 of the dinar .

Khalis	73 , 000
Nahr Malik	50 , 000
Radhan and Bayn al-Nahrayn	50 , 000
Bayat	40 , 000
Dujayl	35 , 000
Sadrayn	30 , 000
Harba	25 , 000
Baraz al-Ruz	20 , 000
Khanikin	12 , 200
Zangabad	11 , 500
Anbar	10 , 000
Hulwan	6 , 100

Al-Musttawfi added that this sum of money , i . e . 3 , 000 , 000 dinars , was diminished as a result of the misrule of the governors . (62) This suggests that the land was still productive but the corruption in the government caused the decrease in the land tax .

62) op. cit , , p. 36.

Table 4

The land-tax of al-Jazira between the 9th and the 14th centuries .

Period		Land Tax (or Kharaj) Dirhams
1 —	810 A . D .	58 , 000 , 000
2 —	900 A . D .	24 , 000 , 000
3 —	1335 A . D .	11 , 550 , 000 (63)

The above table shows a remarkable reduction of land-tax , due mainly to the civil wars , and the domination of tribalism . The reduction in the land - tax of al-Jazira between 900 A . D . and 1335 A . D . was about 50 per cent while the reduction between 810 A . D . was 58 per cent . A comparison with the revenues of Iraq shows that the percentage of reduction in the land - tax was higher than of al-Jazira , due to fact that agriculture in al - Jazira depended upon rain , wile in Iraq it depended upon irrigation .

The land - tax of al - Jazira in 1335 was 1 , 925 , 000
It was collected from the following : —

63) al-Mustawfi , op. cit . , p. 102 .

Haider , op. cit . , p. 64 .

Table 5

Al - Kharaj of al - Jazira in the year 1335

Towns	Revenue in Currency
Their Dependencies	Dinars
Mosul	328 , 000
Arzn	275 , 000
Miyafarikin	224 , 000
Jazira ibn 'Omar	170 , 200
Sinjar	147 , 500
Mush	69 , 000
'Amadiya	68 , 000
Sird	45 , 000
Amid	30 , 000
'Akr	27 , 400
Arbil	22 , 000
Bartilla	13 , 200
Karmalis	11 , 200

Owais the Jalair tried his best to rebuild the country and bring back its prosperity , and he even exempted the governors from al-Kharaj -- which was usually sent to the central treasury in Tebriz — in order to save the necessary money for the schemes of improvement .

During the period of Timur's conquest the revenue from the provinces was divided unequally into lots , each Amir

and " Ming Bashi " drawing one . If the sum exceeded the amount of his pay , this excess passed to another , but if it was insufficient , another lot was given to him to supplement it . (64)

It is obvious that the various political factors , the silting up of the canals and the repeated floods , all acted together to decrease the cultivated area so that eventually the land - tax collected became very little . The governors therefore sometimes raised the percentage of the revenue in order to get more money . Uzun Hasan , of the Ak-kuyunlu fixed the amount of land - tax . (65) On the other hand , his son . Sultan Ya'kub , decreed that there should be a decrease in the taxation , which as a legacy from the former dynasty , the Kara Kuyunlu , was destroying the life of the people . (66)

The Ottomans completed conquest of Iraq and al-Jazira in 1534 . Their theory of land revenue had been developed under the influence of the religious teachings and the procedure of 'Omar , the Second Legitimate Caliph . (67)

The Kharaj was levied on the Kharajiya land but it was called the " 'Ushr " both on Kharajiya lands and the

64) Belin , " Du Regime des Fiefs Militaires dans l 'Islamisme",
p . 220 .

65) Minorsky, " The Ak-Kuyunlu and Land Reforms ", p. 450 .

66) Minorsky, " Persia in 1478 - 1490 ", p. 41 .

67) al-'Azzawi , op. cit . , vol . 4 , p. 265 .

'Ushriya lands . The land - tax varied from 10 per cent to as much as 50 per cent of the gross produce . (68)

3 — The Cultivated Land

(a) Extent

The area of the cultivated land during the Sassanid period was estimated to be about 150 , 000 , 000 jaribs . (69)

After the Islamic Conquest , it seems that much land was left waste . There were several reasons for this :

1 — Al-Bataih covered an area of about 20 , 000 , 000 jaribs , which was cultivated before the time of the flood that took place in the year 629 A.D. and caused the formation of the Great Swamps (al-Bataih) .

2 — The district of choukhi which , according to the Arab geographers . was one of the most fertile and productive districts in Iraq , was left waste because the river Tigris changed its lower course in 629 A . D .

3 — The destruction of some of the irrigation canals during the last few years of the Sasanid era left the lands on their banks dry . Thus , 'Omar (the second legitimate Caliph) caused the mensuration of Iraq and , after careful survey , the result showed an area of 36 , 000 , 000 jaribs . As the jarib was approximately 1 , 384 square metres , the

68) Haider , op. cit . , p . 203 .

69) Yakut , op. cit . , vol . III , pp. 174 - 175 .

cultivated area was nearly 50 , 000 square kilometres , or about 12 , 000 , 000 acres . This area is $\frac{5}{8}$ of the land (cultivable) in the delta at the present time , which , is estimated at about 80 , 000 square kilometres . (70)

The 36 , 000 , 000 jaribs mentioned by the Arab historians as being subjected to land - tax did not seem , however , to have been all under cultivation in any given year . They appeared to represent the cultivable as well as the cultivated area , as they included the “ Amir ” (i . e . developed land) as well as the Ghamir (land under water) which could be cultivated .

Most probably they also included the fallow land which constituted about half the area under grain in view of the biennial fallowing system then (as at present) being followed in grain cultivation . This can be gathered from the fact that Moslem Jurists have given freedom to the tenants and landlords to till the lands or leave them uncultivated

70) The modern extent of the cultivated land is as follows :

2,754,000 acres under rain-grown crops .

1,684,000 ” irrigated by natural gravitational flow .

1,307,500 ” ” by dams , pumps , etc .

5,745,500 or about 20,000,000 jaribs .

The above is the cultivated land at the present time in the whole of Iraq . while during the first century of the 'Abbasid period the irrigated land only in al-Sawad was nearly twice that of the cultivated land at the present time .

as long as they paid the land - tax : in cases where the Kharaj was fixed on the land , but where the Kharaj was proportional to the produce , only three years were allowed for the land to remain uncultivated . As grain land was by far the predominant land in al--Sawad , the total area cultivated in any year during the 'Abbasid dynasty was considerably smaller than the above figure , and it would probably be between six and seven million acres , but it might have been less .

After the ninth century the decline of the 'Abbasid caliphate developed and Iraq became a battlefield . Twice the country was conquered before the time of the Mongols (by the Buwayids and the Seljuks) . This brought about a state of instability and insecurity which has always and in every country been a deterrent to economic development . The governors were engaged in costly foreign wars and thriftless expenditure on the palaces , thus they had neither the money nor the time for the maintenance of the irrigation system , and the longer the system was neglected the more difficult and costly it became to repair , until eventually most of the canals silted up . The vast areas that were once rich fields and luxurious gardens were left waste .

The Il-Khanid (Mongol) dynasty succeeded the 'Abbasid caliphate . The Il-Khans and the governors tried to bring back the prosperity of the country . Under the care of 'Ala

Al-Din (the governor of Iraq — died in 1282) the country flourished again . He devoted himself to restoring the country to prosperity . He spent 100 , 000 gold pieces in digging a canal leading from the Euphrates to Kufa . On this canal 150 villages were constructed and the lands on both banks were cultivatsd . (71) Ghazan Khan encouraged agriculture by granting waste lands to anyone who cultivated them . In the 14th century , according to al-Mustawfi , less than half the cultivable area was under cultivation . (72)

The various political factors and the floods , during the 14th and the following centuries , led to the decay of the irrigation system , which was left without maintenance and accordingly most of the cultivable area was left waste .

In respect of the cultivated area in al-Jazira , no information was given by the different medieval geographers or historians because :

1 — The surrender of most of al-Jazira to the Caliph's troops was on condition that the land was left in the hands

71) Howorth , op. cit . , part III , p. 221 .

72) al-Mustawfi said p. 36 that if the land which was surveyed in the time of the Caliph 'Omar was then under cultivation , being either sown « for cereals » or planted « for orchards » , it would yield a revenue more than double the present sum , For even if the land was all reckoned to be under barley, which only paid two dirhams for each jarib , the 36,000,000 jaribs at this rate would yield 72,000,000 'Abbasid dirhams , which was equivalent to 12,000,000 currency dinars.

of previous owners , who paid a sum of money or part of the products as a tribute .

2 — The mensuration ordered by the Caliph 'Omar was only for lands which depended on perennial irrigation . Cultivation in al-Jazira depended on rain , only a very limited area depended on perennial irrigation , such as the lands on the Lower Zab (round al-Bawazij) .

3 — Most of al-Jazira was pasture land , especially between the Tigris and the Euphrates and the lands on the Persian side of the Tigris .

We conclude from what the different medieval writers said that most of the supplies of Baghdad came from Mosul and its suburbs and that the cultivated land at al-Jazira was as great as that of al-Sawad .

It is noticeable that in countries where livelihood depended on rain fed agriculture or on other more or less constant and stable natural resources , a certain degree of economic life would be established on the basis of self-sufficient communities , no matter how unstable the political and administrative organisation may be . Thus , although al-Jazira was affected by the same causes which devastated Iraq , the ruin which took place in al-Jazira did not reach the standard of the devastation which occurred in Iraq .

By comparing the amount of al-Kharaj collected from al-Jazira in 1335 A . D . as given by al-Mustawfi with the

amount of al-Kharaj during the reign of Sultan Lulu (which was about 10 , 000 , 000 dinars) we conclude that at least one half of the cultivable area of al-Jazira was left dead .

(b) Soil Character

The soil of Iraq is soft , rich and fertile : thus it was quite common (in the 4th century A . D .) to find the cultivation of the same kind of grain in the same field for three years in succession . (73) According to Herodotus (74) the grain commonly returned two hundred fold to the sower and sometimes 300 . Strabo (75) added that the country produced larger crops of barley than any other country . The soil did not lose too much of its fertility during the long period of cultivating the land . In the 14th century A.D. al-Mustawfi said that in most seasons one (mann) of seed gave a crop of 20 mann weight , and in the country too a tamarisk tree (tarfa) attained such a size that its trunk measured three “ ba’s ” , and the palm christie (khirwa) became so big that a man could sit on its branches , without their breaking . (76)

73) Newman , op. cit . , P. 78

74) op. cit . , books I-II1, P. 362

75) op. cit . , vol . P. 215

76) op. cit . , P. 41

Ba's » singular Ba' » A " ba " is the length of two outstretched arms .

The fertility of al-Jazira was beyond question as well , and according to al-Hamadhani , (77) it was noted for fertility among the whole population of the Arabian peninsula . Al-Bashari added (78) that the provisions of Iraq were from al-Jazira .

Various methods , such as fallowing , rotational cropping or manuring , were adopted to prevent the soil from becoming exhausted . (79) According to Abdulatif al-Baghdadi , (80) the fertility of the soil was renewed by the fine soil blown by winds which was deposited during the ploughing season . The silt brought by the Tigris and the Euphrates in the flood season also regularly renewed the fertility of the land .

4 — Chief Crops

Over most of al-Jazira (except several places such as near al-Bawazij) only one crop a year was produced because water was available only in winter . By contrast , in Iraq (al-Sawad) more than one crop was produced

77) op. cit . , PP. 32—33

78) op. cit . , P. 136

79) A common method of manuring was to arrange with the owners of the cattle and sheep to allow their animals to graze in the field for some time .

80) Ibn al-'Awam, op. cit . , PP. 99, 101 and 116

al-Mustawfi, op. cit . , P. 41

because of the perennial irrigation , but after the decay of the irrigation system during the 10th and the following centuries , perhaps only one crop was produced a year . Both winter and summer crops were cultivated .

(a) Winter Crops

These crops were usually sown between September and November , before the rains began , and the harvest was in April and May . The chief winter crops were wheat and barley . The yield of the different cereals fluctuated according to the rainfall (especially in northern Iraq — al-Jazira) . and to the arrival of the Arabian locusts , which have so long threatened these plains .

(1) Wheat

This was Iraq's most important crop , and it formed the basic diet for most of the people .

According to Herodotus it commonly returned two hundred fold to the sower but during the Il-Khan period it commonly returned only twenty fold to the sower . (81)

Wheat cultivation in al-Jazira depended mainly upon rain , while in Iraq , on the whole , it depended upon irrigation.

81) This wide apparent difference between the two periods was due partly to the exaggeration of Herodotus and partly to the exhaustion of the land .

The fallow way of cultivation was adopted almost all over the country . One half of the cultivated land was devoted to different crops , while the other half was left fallow in order to restore its fertility .

Wheat cultivation occupied most of the land devoted to winter crops . (82)

In the years of scarcity famines took place and the people ate cats , dogs , grass and even human bodies . (83)

Usually each kar (84) of wheat was sold for about 40 dinars (85) ($27\frac{1}{2}$ dinars for a ton) , but in the time of famine it was sold for very high prices , for instance in the year 1285 A . D . each kar was sold for 180 dinars (125 dinars a ton) . (86)

(2) Barley

This was the second most important crop . It was cultivated in al-Jazira as in Iraq where water was adequate , and it was a rival to wheat cultivation .

Barley was the principal fodder for the animals and it is probable that it was eaten by the people as well , espec-

82) al-Mawardi , " al-Ahkam al-Sultaniya " , P. 77

83) Ibn al-Jawzi , " Miraat al-Zaman " , vol . 8, part I , PP. 68,353
Ibn al-Futi , op. cit . , PP. 447—9

84) 1 Kar = 1440 kilogrammes .

85) al-Kalkashandi , op. cit . , vol . 4 , P. 423

86) Ibn al-Futi , op. cit . , PP. 446 - 7

ially the poor classes .

Its cultivation depended upon rain in al-Jazira , where rain was adequate , while in Iraq it depended on irrigation . Usually each kar of barley was sold for 15 dinars ($10\frac{1}{2}$ dinars for a ton) , (87) while in the time of famine , for instance , in the year 1285 each kar was sold for 120 dinars (83 dinars for a ton) . (88)

(b) Summer Crops

The chief summer crops were rice , cotton , corn , sugar-cane and vegetables . These were cultivated mostly in Iraq , but also in some parts of al-Jazira where water was available during the summer time , e . g . either near springs or where water-wheels were used to raise the water from the rivers . In Iraq where water was available all the year round through different canals and near marshlands , summer crops were extensively grown . (89)

87) al-Kalkashandi , op. cit . , vol . 4 , P. 423

88) Ibn al-Futi , op. cit . , pp. 446 - 7

89) Rain falls only in winter and floods come too early for the summer crops and too late for the winter crops . Thus perennial irrigation is necessary in countries such as Iraq in order to supply the cultivated lands with water .

(1) Rice (90)

Rice occupied the third place in respect of the area cultivated . (91) It was grown particularly at al-Bataih where sufficient water was available and drainage was easy .

Rice was cultivated in Kaskar , al-Bataih , Basra and Kerbala .

(2) Cotton

Cotton cultivation was known in Iraq long before the Islamic conquest , (92) while at al-Jazira its cultivation was introduced in the 10th century A . D . by the Hamdanid

90 Rice cultivation was known in Iraq long before the Islamic conquest , and its cultivation was mentioned by Strabo vol . VII, P. 29

91 Rice covers at the present time five per cent of the area under cultivation . Its cultivation is important in the lower valley . The average production between the years 1950 - 1954 was 25,000 tons .

92 According to Lennie « Scot. Geog. Mag. vol. 52, No. 1 p, 49 » cotton from India was grown experimentally in the palace of the king in Babylonia at the beginning of the 7th century B . C . According to Adam Metz « vol. 2, p. 300 », cotton cultivation was not known in Iraq during the first centuries of the Islamic era until it was introduced by the Hamdanid princes for the first time during the 10th century A . D . This might be right in connection with al-Jazira but not with Iraq , because its cultivation was known in Iraq during the Islamic conquest , for it was reported by al-Baladhari p. 271 . that the Caliph 'Omar exempted cotton from al-Kharaj .

princes who brought its seeds from Persia .(93)

It was cultivated in different parts of the country , such as near Kufa , Baghdad and Karbala in Iraq , Arbil , Bartila ,Arzn and Ras al-'Ayn in al-Jazira .Al-Mustawfi praised the cotton cultivated in both Arbil and Bartila , which he described " as an excellent cotton " . (94)

(3) Corn Dhira

Corn was cultivated in both Iraq and al-Jazira . It was sometimes eaten by people instead of wheat .

Corn was cultivated in Basra , Kufa , Sadrain , Nil and Baghdad in Iraq , and Arbil , Bartila , Arzn and Ras al-'Ayn in al-Jazira .

Other summer products were sugar-cane , which was one of the principal products of Iraq during the 'Abbasid era . It seems that its cultivation shrank during the 13th and the following centuries as a result of the silting up of the canals . Sugar-cane was mentioned by al-Mustawfi as being cultivated at Badaraya : it was also cultivated at al-Bataih and Wasit . (95) Sesame was cultivated abundantly in both parts of the country .

93) Metz , op. cit . , vol . 2 , p. 300

This was a part of a policy which was adopted by the Hamdanids to cultivate more profitable crops , such as cotton, instead of trees .

94) op. cit . , pp. 102 , 103

95) Ibn. Sa'id , op, cit . , p. 74

5 — Fruits

The Arabs were interested in fruit and its cultivation . They tried to spread fruit planting all over the country wherever the water reached . From other lands they brought shoots of different fruits , such as lemons , oranges and others . They even grafted different kinds of fruit trees in order to get new fruits . (96)

During the 13th and following three centuries , because of the civil wars , floods and the silting up of the irrigation system , most of the fruit orchards died out and the governors , during the different dynasties , were too busy to look after fruit trees and their cultivation . Ghazan Khan was interested in agriculture and fruit cultivation and fruit and he encouraged both of them . He even imported from other countries . (97) Nevertheless the geographers , such as al-Mustawfi , travellers such as Ibn Batutah , New Berrie and Teixeira , praised the orchards and the different kinds of fruit growing in the country .

The following fruits were mentioned by different geographers and travellers of the Mongolian era :

96) Metz , op. cit . , vol. 2 , p. 180

97) Howorth , op. cit . , part III . p. 493

(a) Citrus

Citron , Bitter Orange , Lemon and Orange

Citrus fruits were not known in the country in the early years of the Islamic era . The citron and the bitter orange were cultivated in Iraq for the first time in the 10th century A . D .

Al-Mas'udi (98) reported that the spherical bitter orange tree and the citron tree were brought from India after the year 912 A . D . and were first cultivated in 'Omen , then transplanted to Basra , Iraq and al-Sham (Syria) . He added that this fruit had lost its nice smell and its bright colour which it had in India . According to al-Mas'udi the reasons for this failure were firstly that the farmers were ignorant and did not know the right way to cultivate the tree , and secondly that the soil , water and climate in Iraq differed from those of India . (99)

Ubulla , 'Ana , Ba'kuba and Baghdad were celebrated for their citrus fruits . Ba'kuba on the Diyala river was celebrated for its oranges and other citrus fruits . According to al-Mustawfi (100) oranges were so cheap in Ba'kuba that 300 — 400 were sold for a dirham .

98) op. cit . , vol . 2 , pp. 438 - 9

99) According to Metz « vol . 2 , pp . 180 - 1 » Khamarawayh « 10th century A . D . » was fond of his garden , thus some bitter orange shoots were brought from India and were cultivated in it .

100) op. cit . , p. 49

Ibn Sa'id , op. cit . , p. 74

Several orchards were mentioned in several towns , both in Iraq and al-Jazira by the geographers of the Mongolian era , and by travellers , but they did not specify the fruit trees .

(b) Pomegranates

This tree was cultivated in Mosul for the first time in the 10th century A . D . (101) but before that pomegranates were imported to Mosul from al-Bawazij . Pomegranates were used for cooking , (102) while the skin was used for tanning animal skins . They were exported either as fresh fruit or dried .

Baghdad , the Dujayl district , al-Bawazij and 'Ana were mentioned by the geographers of the Mongolian era as being celebrated for the cultivation of pomegranates . According to al-Mustawfi , Baghdad and al-Dujayl district were famous for their pomegranates , especially al-Daraji .(103)

101) Ibn al-Athir , op. cit . , p. 139

102) al-Katib al-Bagdadi , " Kitad al-Tabikh " , p. 11 , and the following pages . According to Metz « vol . 2 , P. 258 » the pomegranates were used for cooking in the same way as the American tomato is used at the present time .

103) op. cit . , PP. 41, 48 .

Acctrding to Ibn Sa'id P. 37 , the pomegranates of al-Bawazij were exported to Baghdad by way the Tigris .

(e) Vines

During the Islamic era the vines had the first standing amongst all other fruits . Moreover the new conquerors (the Arabs) brought with them a new kind of vine which was called al-taifi (after al-Taif to the southeast of Mecca). It seems that viticulture spread all over the country , on the new reclaimed lands and on the mountains . (104)

During the 10th century A . D . the Hamdanids vines in Mosul for the first time . (105)

Vines were cultivated abundantly in Baghdad , Sinjar , 'Akr and Jazira ibn 'Omar . Al-Mustawfi reported that the grapes of Baghdad were proverbial , particularly "al-Muraki" grapes , the equal of which did not exist elsewhere . (106)

(d) Olives

The olive tree was known in Iraq before the Islamic

104) According to al-Hamadhani p. 30 at Jabal Kandil there were different fruit trees , such as vines , pears , etc .

105) There was a shortage of fruits and fruit cultivation in Mosul. During the 10th century A.D. most of the fruit trees were planted, such as vines , pomegranates , pears and apples .

Ibn al-Athir , op. cit . , p. 139

106) op. cit . , p. 41

Ibn Sa'id p. 74 reported that Baghdad was famous for al-Razki grapes .

107) al-Mas'udi, op. cit . , vol . 2 , p. 184

conquest and was introduced by the Romans . (107)

The olive tree was cultivated in most parts of the country, especially at al-Jazira , in Sinjar and Ba'shika . Olives were used either as a fruit to be eaten during meals or to provide olive oil . 'Ana (108) and Sinjar (109) had numerous gardens where olives , figs and other fruits grew abundantly .

Other fruits were : manna , apricot , nabk , apples , peaches , pears and plums . The trees that could withstand cold weather were cultivated as well , such as nuts , chestnuts and almonds in al-Jazira , Haditha , Hit , Alusa and Juba . (110) Sumac (sumach) as well was cultivated in al-Jazira , especially at Sinjar .

Gall — trees were also cultivated in the country , particularly in the mountainous regions . Galls were exported to Aleppo , Tripoli , Damascus and India . (111)

(e) Date Palms

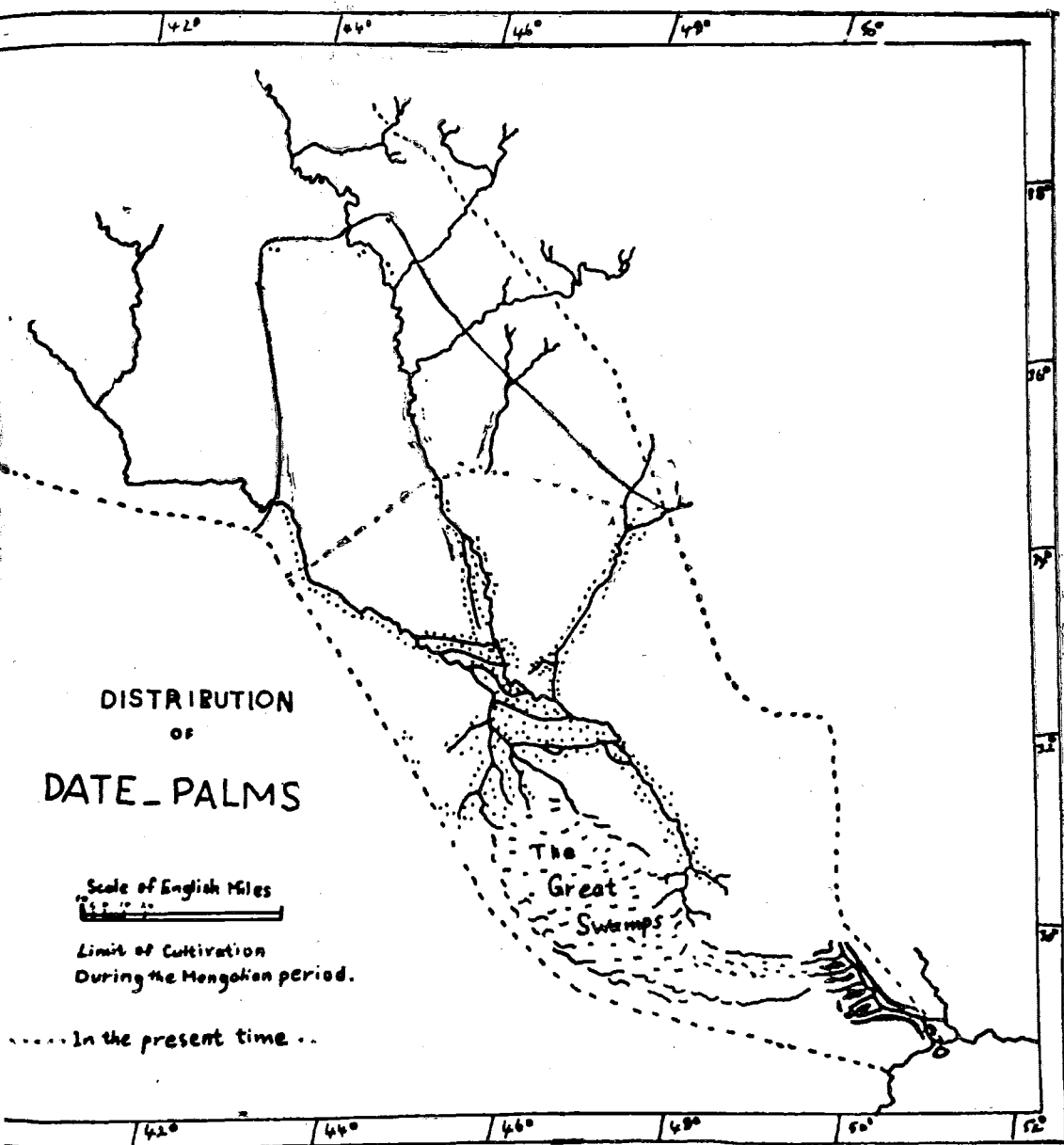
Date-palms were the most popular trees in Iraq . They were cultivated from 'Abbadan on the shore of the Arabian Gulf in the south to as far north as Ba'shika , Mosul , Tel-Afar ,

108) Teixeira , op. cit . , p. 51

109) al-Mustawfi , op. cit . , p. 104

110) Ibn Batutah p. 304 described the lands between Hit , Haditha and 'Ana as one of the richest and most fertile areas in the world .

111) Teixeira , op. cit . , p. 51



MAP No. 10

Sinjar and 'Ana . (112) At the present time the northern limit is a line extending from Khanikin to Tekrit on the Tigris and to Hit on the Euphrates . (113) It seems the Arabs had undertaken the cultivation of date-palms (by shoots) all over the country in Basra , Kufa , Wasit , Baghdad , Samarra and other places . (114)

112) See the map of the distribution of date-palms .

Abu al-Feda, *op. cit.* , p. 283

113) The climate is suitable for the cultivation of palm-trees in Mosul and its vicinity and Sinjar, especially in the valleys . Until now there are palm-trees in 'Akra " about 100 miles to the north-east of Mosul " . Presumably during the 15th and the following centuries in the time of anarchy , civil wars and domination of tribalism, a severe cold winter killed the palm-trees in northern Iraq, and no-one tried to replace them with other palm-trees .

114) The Arabs cultivated the palm-trees in Iraq and al-Jazira for the following reasons :

a . It is the sunna " traditional teaching " in the month of Ramadan to break one's fast by eating dates .

b . The different uses of the tree and its fruits . The tree provided shelter from the fierce heat of summer, and mats and other necessities were made from its leaves . The trunk of the tree was used to roof the houses . or firewood . The branches were used on joyful occasions . The fruit was eaten and the stones given to animal . From the juice of the fruit honey , molases , and wines were made .

(1) Date-Palms of Shatt al-'Arab (Dijla al-'Aura)

This part of Iraq is the most suitable place for date-palm cultivation . The soil is deep and the water is always available . The tide from the Arabian Gulf comes up it , reaching as far as the head of the channel of Madhar and 'Abdasi , filling and emptying the numerous canals irrigating the groves of the date-palms extending on both sides of the estuary . (115)

When the Arabs first came as conquerors they built new towns such as Basra for the soldiers and the immigrants, and they planted date-palms for the first time . Yakut reported (116) that when Abu Bakrah saw Basra and its vicinity he said : "This is a land of date-palms" . He planted a date-palm shoot and was followed by others . The Arabs then began to reclaim the lands on both banks of Shatt al-'Arab and dig new canals , until eventually the whole land was full of canals which were numbered more than 120 , 000 , and the date-palms extended from 'Abbadan to 'Abdasi and Madhar . These date-palms were planted on straight lines as if they had been planted at one time .

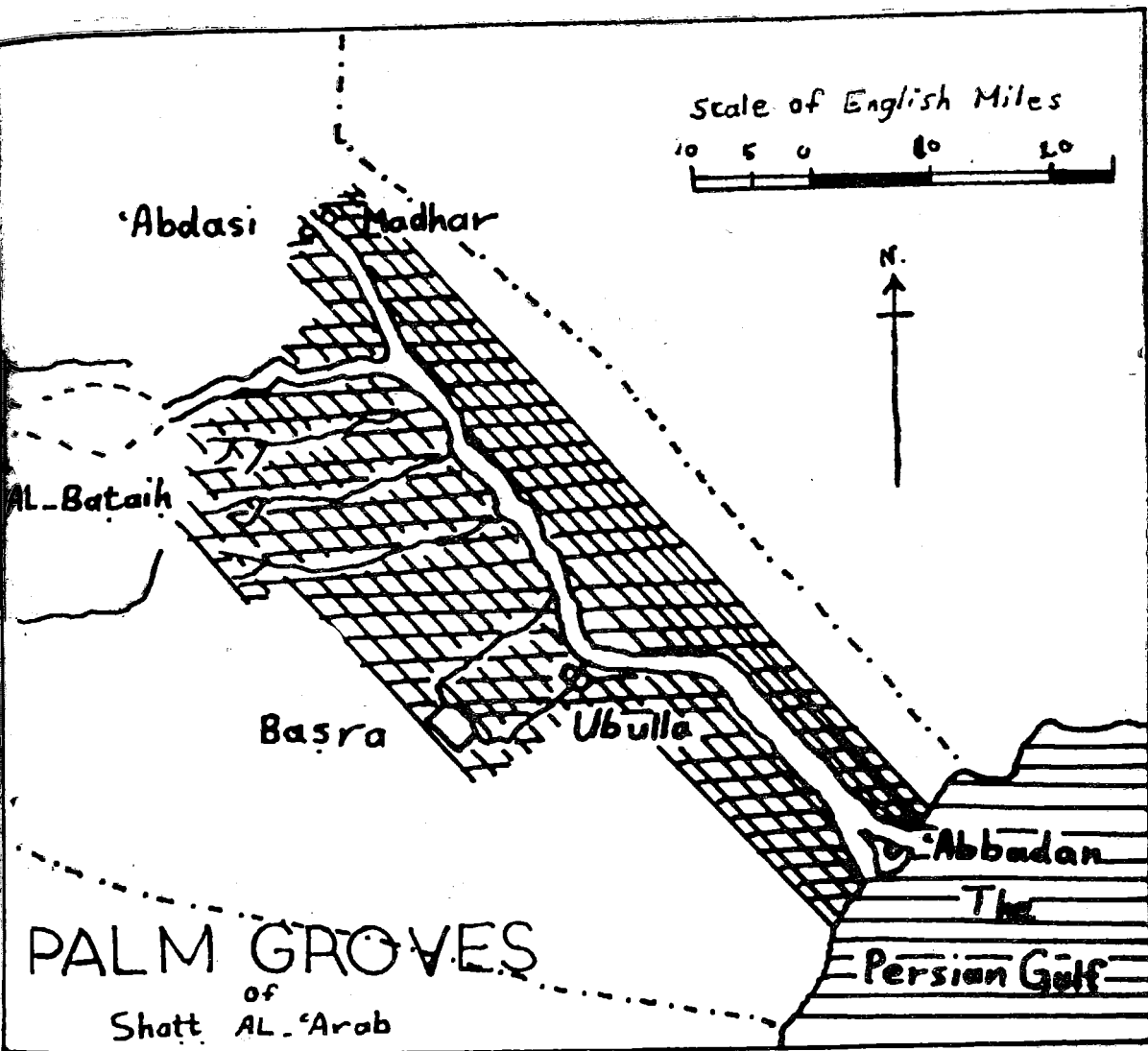
The palm-groves extended for nearly 30 leagues in length by two leagues in breadth . (117) Ibn Batutah added (118)

115) See the map of the palm groves of Shatt al-'Arab .

116) op. cit . , vol . 1 , p. 641 .

117) al-Mustawfi , op. cit . , pp. 45 - 46 .

118) op. cit . , p. 87 .



MAP No. 11

that no place on earth excelled Basra in the extent of palm-groves . (119) The dates were excellent and they were exported to India and to nearer and further China . (120) The current price of dates in the markets of Basra was 14 Ib . to an Iraqi dirham (currency) . (121)

(2) Date-Palms of the District of Baghdad

This district was celebrated for the quantity and the quality of its date-palms . When Abu Ja'Far built Baghdad, date-palms were not yet planted in this place . The Arabs began to plant the date-palm's shoots which they brought from other parts of al-Sawad . Al-Ya'kubi reported (122) that Ka'yuba al-Bustani (the gardener) al-Basri was the one who planted the palm-trees in Baghdad . In a short time there were in this district as many date-palms as in the Basra district . Al-Mustawfi praised the dates of Baghdad and he mentioned two kinds -- al-Makhtum and al-Khastawi . (123)

119) According to al-Sijistani pp. 17 - 18 the date - palms of Basra were more than the date-palms in the other then known countries .

120) al-Mustawfi , op. cit. , p. 40 .

121) Ibn Batutah , op. cit. , p. 87 .

The enumeration which took place in 1945 proved that there were about 10,056,547 . In 1952 there were about 13,000,000.

al-Dabagh , op. cit. , pp. 71 , 76 .

122) " Kitab al-Buldan " , p. 244 .

123) op. cit. , p. 41 .

It seems that this district lost most of its date-palms as a result of the silting up of the canals and the continuous wars and sieges, which brought about the ruin and the destruction of most of the palm groves.

6 — Vegetables

The most important vegetables were : peas , chick-peas , cucumber , beans , radishes , watercress , onions , leeks , garlic , marrows and egg-plant (باذنجان) , mint , celery , beet , melons and water melons . (124) Sometimes three crops of water melon were produced a year . (125) There was a kind of melon which was called "al-Shulunk " and had the same taste as the Egyptian water melon . (126) Al-Nuwairi mentioned a kind of melon called " al-Dastinbo " . (127)

7 — The Forests of North and North-East Iraq

In the mountainous region , rainfall is adequate for the

124) al-Katib al-Baghdadi , Muhammad ibn al-Hassan, " Kitab al-Tabikh " , pp. 9 , 15 , 17 , 18 , 26 , 34 . The green water melon was known to the Iraqis as al-Batikh al-Rakki .

125) al-Mustawfi , op. cit . , p. 46 .

126) Abdollatiphi , " Compendium memorabilium Aegypti " p. 32 .

127) op. cit . , vol . IO , p. 15 M. S.

The Arabs knew a special kind of potato which was known to the Iraqis as al-Kushuj « sweet potatoes : "Ipomold" » . This plant was imported from Persia . al-Karmali , Pere Anastas " Hal 'Arifa al-'Arab al-Batata " M. Gh. T. B. , vol. 1 , p. 42, 1942 ,

support of forests . (128) Towards the south-east where rainfall is insufficient , these forests become scattered and gradually entirely disappear .

The new conquerors (the Arabs) were prohibited from cutting the trees or burning them , and every one who cut a tree must plant one to replace that which he had cut. (129) But the need for timber for the small industries of that time, and the need for fuel for the inhabitants of the mountains and the demands for fuel outside the region have resulted in the clearance of most of the forests . On the other hand , charcoal burning was another and perhaps an important factor in the clearing of the forests . A strong incentive for this deforestation was offered by the jurists who allowed that unclaimed forest land might be used by all for the collection of firewood and that everyone was entitled to help himself in such forests .

During the Mongolian period the forest lands of mountainous north and north-east Iraq extended further northwards than they do today , as far as Miyafarikin , Amid , Si'rd and Nasibin , which were considered as part of al-Jazira district . (130)

128) The rainfall in the mountainous region is about 20 inches a year which is enough to support the needs of the trees .

129) al-Baladhari , op. cit . , P. 9 .

130) al-Kazwini , op. cit . , PP. 241 , 266 , 313 , 330 .

Abu al-Feda, op. cit . , P. 27 ,

These forests comprised different kinds of trees , such as gall trees (131) pear trees and oaks .

8 — Pastoralism

A considerable part of the wealth of the country depended on breeding sheep , goats , cows , buffalo , camels , horses and asses .

In order to increase the fertility of the land , the farmers used to graze the flocks of sheep and goats on the land which was left fallow .

Pasture lands were available in both Iraq and al-Jazira . Al-Mustawfi mentioned the rich pasture land round Baghdad , (132) also other pasture-lands were mentioned , such as those near Musayab , Karbala , Basra , 'Ana , etc .

9 — Summary

The prosperity of the country began to decline after the ninth century , when the 'Abbasid caliphs were dominated by their Turkish bodyguards .

As a result of the long neglect of the irrigation system , most of the canals silted up and the lands they once served were left waste . Moreover , as a result of the high land-tax and the unsatisfactory land-tenure , most of the farmers

131) Teixeira, op. cit . , P. 52 .

132) al-Mustawfi , op. cit . , P. 41 .

deserted their lands and became shepherds . Thus it is obvious that the process of devastation had started long before the Mongolian conquest .

The Mongols tried their utmost to bring back the prosperity of the country . Ghazan Khan gave the waste lands to anyone who wanted to cultivate them . He provided the tenants with seeds , oxen and fixed the land tax . Ghazan gave the waste lands and the crown lands to the soldiers .

It seems that the civil wars , revolts of local governors, floods , locusts , the neglect of the canals , the famines and the pestilences , which exterminated most of the population , all acted together to destroy the prosperity of the country .

The cultivated area in the 16th century was on both banks of Shatt al-'Arab where palm-groves , corn , wheat , rice and different fruit trees existed , thanks to the action of the tide which automatically raised the water of the river to flow into the canals leading to the palmgroves . Round al - Bataih and on its islands rice was cultivated . Round Kufa , Najaf and Karbala , rice , fruit , cotton and palm-groves were cultivated when the water was available . Hilla and its vicinity were celebrated for their fruit , date-palms , wheat , barley , etc . On the Tigris between al-Bataih and the present Kut , the land produced different kinds of crops , but in the 17th century this area was ruined as a result of the shifting of the Tigris to its present course .

Baghdad and its dependencies were celebrated for cotton , wheat , barley , different fruits and date-palms besides the pasture lands . The lands on both sides of Tarik-i-Khurasan were still productive , especially around Ba'kuba , Shahraban , Deli 'Abbas , Baraz al-Ruz , Jalula , Khanikin , along the Diyala river and al-Khalis canal , where date-palms , fruit , wheat and barley depended on semi-perennial irrigation .

On the Euphrates from Hit as far north as 'Anah the lands were celebrated for palm-groves , immense quantities of fruit , such as nuts , dates , oranges and different vegetables grew there .

On al-'Adein river and between the Lower and Upper Zab wheat and barley were cultivated abundantly , also round Mosul . Moreover , in northern Iraq , different fruit trees were flourishing .

CHAPTER - 6

Industry

1 — Introduction

2 — Textiles

Weaving

Dyeing and Bleaching

3 — Metal Making

(a) Arms

(b) Blacksmiths

(c) Goldsmiths

(d) Inlaying

4 — Paper Making

5 — Glass Making

6 — Other Industries

(i) Building Materials

(ii) Minting

(iii) Wine Making

(iv) Molasses Making

(v) Stationery

(vi) Copying and Binding of Books

(vii) Carpentry

7 — Summary

1 — Introduction

It has been previously shown that Iraq was primarily an agricultural country, and that the main occupation of its people was cultivation.

Industry ranked second in importance after agriculture: moreover, some of the chief industries depended on it for their supply of raw materials. But it was the products of industry in those ages that formed the bulk of exports and thus greatly contributed to the wealth of the country.

Some of the industries dated from much earlier times than the 'Abbasid era: perhaps some of them were inherited from the Babylonians and the Assyrians, e. g. mat and carpet weaving and pottery making. (1)

Nevertheless they received a stimulus in the 'Abbasid times for reasons which can be summarised as follows:

1 — Craftsmen migrated to Baghdad after it became the metropolis of the Islamic empire during the 'Abbasid dynasty. (2) They came from different countries searching

1) According to Fraser « PP. 104—5 » the Babylonians were famous for their manufacture of linen and woollens, and their carpets of finest fabrics and most splendid dyes; Speiser added P. 137 that the Sumerians produced painted pottery.

2) According to Ibn Rustah P. 251, industry flourished in Baghdad, and all kinds of industries developed there, because the skilful craftsmen migrated to Baghdad from different countries.

after wealth . Thus the new immigrants introduced new industries from their own countries , such as the making of Tustari stuffs . (3) Sometimes the caliphs themselves sent for craftsmen from different countries . (4)

2 — The 'Abbasid caliphs themselves were interested in industry and industrial products , not only because of the profits they made from it , but also because its products satisfied much of their own needs , for which they paid lavishly , together with those indispensable needs of the population of the country . (5) Even some of the caliphs enjoyed industry and took part in it . (6)

3) The Tustariyin *quartar* was so called because it was inhabited by settlers from Khuzistan , who manufactured in Baghdad the Tustari stuffs for which their native city was celebrated .

Le Strange , " Baghdad During the 'Abbasid Caliphate " , pp. 97—8 .

4) When al-Mu'tasim constructed his new capital " Samarra " , he sent for expert craftsmen . There came those who were expert in al-Karatis making « pens » from Egypt , in glass making , mat and pottery making from Basra and Kufa .

al-Ya'kubi , *op. cit.* , p . 264 .

5) According to Ibn Khaldun (*Prolegomenes* vol . 2 , p . 312) the encouragement of the caliphs was the main reason for the flourishing of the industry because , according to him , the government was the greatest market for industrial products .

6) According to Benjamin of Tudela p . 95 the Caliph al-Mustanjid 1160—1170 A. D. enjoyed nothing but what he earned by—

3 — The expansion of the trade of Iraq as a result of wide range of friendships of the caliphs in Asia , Africa and Europe , in addition to the great extent of the 'Abbasid empire , led to a greater demand for the products of the Iraqi industry . There is evidence to prove that the finest fabrics , particularly the “ 'Attabi ” of Baghdad , the “ Musline ” of Mosul and “ al-Saklatun ” , were used in the Royal courts of Asian and European countries . (7)

4 — The economic potentialities of the country stimulated industry and might be summarised as follows :

(a) After the decline of the 'Omayyad dyansty in Damascus , Iraq became the abode of the caliphate , and Baghdad became the metropolis of the 'Abbasid Empire . Thus all the revenues which were collected from the different parts of the empire were spent in Iraq . These revenues were left at the disposal of the caliph , who used them either for

the labour of his own hand , and therefore manufactured coverlets which he stamped with his seal , and which officers sold in the public markets . These articles were purchased by the nobles of the land , and from their produce his necessities were provided .

Tho exact date of the journey of Benjamin is not known , Some said it was before 1170 A . D . , others said in 1173 A . D . during the reign of the Caliph al-Mustadi .

7) In February 1603 , when Queen Elizabeth received the Venetian Scaramelli , the Queen was described as wearing a dress of silver and white taby . Le Strange , “ Baghdad ... ” , p . 138 .

public interests , such as the digging of canals , or for luxuries for himself and his attendants : therefore the incomes of certain people were ultimately increased . (8)

(b) The wealth of the people provided a growing market for local industry .

(c) Labour supply was available and very cheap . For instance , the fees of the mason during the reign of al-Mansur were one silver Kirat (Kirat Fida) while the labourers' fees were two Habas (Habatain) . (9)

8) According to Zaidan vol. 2, P. 64 the revenues collected from the different countries of the Empire were :

Table 6

The revenues of the 'Abbasid empire

Dato	Yearly Revenues in Dirhams
1 . During the reign of al-Mamun 813—833 A. D.	390,880,000
2 . During the reign of al-Mu'tasim 839 A. D.	388,291,000
3 . About the middle of the 10 th century A. D.	299,265,000

The expenses of the government were limited . In the year 892 the expenses were 2, 500, 000 dinars because the government officials were limited . The rest of the revenues were left at the caliphs' disposal . al-Mansur left 810,000,000 dirhams , while al-Rashid left 900,000,000 dirhams .

9) al-Bashari , op. cit . , P. 121 .

al-Khatib al-Baghdadi , op. cit . , P. 6 . —

(d) Raw materials were available in the country ,such as cotton , wool , silk , sesame and dates , which were all necessary for industry .

(e) Both the Tigris and the Euphrates with the transversing canals were navigable for big ships , rendering communication with the towns of Iraq and other countries easy .

5 — Industrial requirements of metal were available either from what was imported or from the share of the government from mined metals . (10) Thus the government got silver , gold , turquoise , ammonia and mercury from Khurasan and Ma Wara al-Nahr , (11) and silver , iron murcury , zinc , petroleum and bronze from Fars . Gold was also obtained from al-Nuba , while iron came from Syria (near Beirut) . (12)

Crafts were usually hereditary and each family speci-

According to Zaidan vol . 2 , P. 71 al-Kirat in Iraq equals 1/20 of a dinar, while al-Haba equals 1/60 . Thus the fees of the mason were 50 fils and that of the labourer 30 fils . According to Hitti vol. 2 , p. 404 , al-Mansur gave one dirham to the mason and 1/3 of a dirham to the labourer .

10) The mines were subject to tax . One fifth of the products of a mine belonged to the state .

11) The Arabs used to call the country to the north of the Oxus Belad Ma Wara al-Nahr .

12) Zaidan , op. cit . , vol . 1 , PP. 177—8 .

alised in a certain industry , knowledge of which was handed down from father to son from generation to generation . (13)
Each craftsman preferred his profession to any other occupation . (14)

According to Kramers , industrial production had developed in a particular way . It was chiefly characterised by being completely lacking in capital , and by its organisation of the craftsmen in guilds . This peculiar form of industrial development proved a great disadvantage to Islam when it came , in later times , into economic competition with the European industry , but at the time of the Islamic prosperity it had made possible a development of industrial skill which brought the artistic value of the products to unequalled height . (15)

The Mongols patronised both art and industry , and

13) Hitti , op. cit . , vol. 2 , P. 395 .

This is still true of the Sabeans (live in Iraq) . They are goldsmiths . They work in silver decoration by al-Mina (enamel) and they keep the secrets of this industry among their sect .

14) al-Duri , op. cit . , P. 100 .

15) Kramers , " Geography of Commerce " . See Arnold , op. cit . , P. 104 . It seems that those guilds hindered industry because the members of the guild who paid money to the government to take the responsibility of a special kind of industry imposed high taxes on everyone who was not within the guild . Jawad " Tijarat al-Iraq Fi al-Karn al-Sadis al-Hijri wa Awail al-Karn al-Sabi ' " , p. 316 . M. Gh. T. B. vol. 9—10, 1942 .

provided protection for craftsmen . During the massacre which took place in Mosul (1262) the whole population except the artsians were put to death . (16) Holaku was fond of architecture and encouraged industry . (17) After the conquest of Baghdad , 'Ali Bahadur was given control of merchants and artisans . (18) According to

16) Howorth , op. cit . , part 111 , P. 182 .

The Mongols were capable of recognising the value of the trained artisans and craftsmen . When Jengiz Khan swept the city of al-Jarjaniyya out of existence in 1220 A. D. he spared the lives of over 100,000 skilled workmen who were transported to Mongolia, and the only persons saved out of the general massacre of the inhabitants of Nishapur in 1221 A. D. were 400 artisans .

Arnold, "The Islamic Book from the VII-XVII century ." P. 69.

17) It might be interesting to narrate the following story for its naive simplicity and to show that Holaku tried to preserve the lives of artisans :

" Several people went one day to ask justice from Holaku against a manufacturer of files who had killed one of their relatives. Holaku , having enquired if there were many manufacturers of files in the country , and learning that there only a few , ordered the aggrieved to avenge their relative's blood upon a manufacturer of pack saddles , as they were numerous . As they insisted that this would not do, he made over a cow to them in satisfaction . "

18) Rashid al-Din , op. cit . , P. 62

al-'Azzawi gave the name as "Nahadur". His own words were:

عين على نهادر للشحنة وارتاقان واوزان . (الارتاقية والاوزانية تعني
النظر في الشحنة وأرباب الصناعات) .

Rashid al-Din (19) all kinds of industries such as carpentry , painting , the inlaying of metals , the manufacture of jewelry and iron work were encouraged besides such delicate industries as glass making .

Ghazan Khan tried his utmost to organize industry and its production . (20) He decreed that the manufacturers within each industry should form a separate guild in every , town , and receive no fixed salary but be found to supply a certain number of articles at a fixed price . Ghazan placed a governor over each of these guilds .

The Royal Manufactory at Baghdad , established by the Il-Khans , was well organised and supervised . It produced different kinds of industrial products , such as textiles , and someone was officially appointed to take charge of it . (21)

To encourage industries the Mongols exempted some of them including yarn spinning , from taxation . (22)

19) op. cit . , P. 172 (in Persian) .

20) Ghazan was a very talented man . He excelled in all fields of art and handicraft , be it metal work , wood work or painting , and directed the artisans himself .

Howorth , op. cit . , part III , P. 493

21) Howorth , op. cit . , part III , P. 561

When the Il - Khan visited the royal manufactory at Baghdad , 'Ali Shah « the administrator » gave him a present - a richly embroidered cap decked with stones .

22) Taxes were levied on yarns but were abrogated in 734 A. D. 1333 A. D. by Sultan Abu Sa'id .

al-'Azzawi , op. cit . , vol. I , P. 513

The Il-Khans were specially interested in the manufacture of weapons and thus they encouraged this industry . There were in each province and town armourers who made bows , arrows , quivers and swords , who received a salary from the state , and were in return , to furnish a certain number of arms . In addition , there were in certain towns regular manufacturers of arms , under the control of officers .

The Mongolian conquest brought foreign influences to bear on both art and industry . The Il-Khan rulers had a great admiration for Chinese culture and art , (23) and according to Arnold (24) Holaku Khan brought with him Chinese painters : thus it was expected that Chinese influences could be traced in the art and industry of Iraq . (25) Arnold added that those influences could be traced in Muslim painting for centuries , even to modern times . (26) The Jalairs encouraged both industry and art . (27) After the conquest of Baghdad by Timur , he took native artisans with him from

23) Dimand , op. cit . . P. 28

24) op. cit . , P. 69

25) According to al-'Azzawi vol. 2, P. 334 not only the Chinese influences affected art and industry but also the Persians , which could be traced in both industry and art .

26) op. cit . , P. 69

27) Some of the buildings which were constructed during the Jalair period are still in existence in Baghdad , with different decoration , which gives us an idea about the high standard of art achieved in that period ,

that city to his residence in Samarkand . (28)

But it seems that the different political disturbances caused a state of anarchy and insecurity which always and everywhere hindered urban activities : thus most of the craftsmen migrated to Syria , Egypt and Persia . Besides the shifting of the highways northwards through Turkey and the discovery of the sea route to the south of Africa , all acted to hinder industry , if not to kill it . Finally , and perhaps the most effective factor , was the competition of European industry which the Iraqi individual industry could not withstand — thus it fell into decay .

The chief industries during the ,Abbasids and the following dynasties about which considerable information is available were :

2 — Textiles

Weaving : The weaving industry dated back to pre — Islamic period , but it flourished and reached its climax during the 'Abbasid era , when it was the most important industry included linen , wool , silk and cotton weaving , besides mat weaving (from the leaves of date -- palms) .

Silk weaving flourished in the 'Abbasid era and its products enjoyed world fame owing to their excellent quality

28) Ibn 'Arab Shah , op. cit . , P. 211

al-'Azzawi , op. cit . , vol . 2 , P. 336

and manufacture . (29) The most celebrated was that of mixed silk and cotton , namely the 'Attabi , which was sometimes mixed with wool . (30)

The cultivation of cotton in different parts of the country encouraged a cotton — weaving industry which was further helped by imports . (31)

Linen weaving also flourished , especially in Basra and Hira . (32) Mat weaving from the “ Halfa ” grass (which was grown abundantly in southern Iraq) and from date —

29) Silken garments had been specifically prohibited by the Prophet . The Muslims very soon after his death encouraged existing silk factories and established new ones wherever they went , and soon they gained a dominating position as leading silk-mercers in the medieval world . This is shown by the names by which many fabrics were known in the Middle Ages .

Arnold , op. cit P. 133

30) The silk was either imported from China and Persia or produced locally . According to al-Karmali (P. 40 L. A. No. 1 de la VIII Annee) al-Badanijin (present Mandili) celebrated for silkworm breeding .

31) It seems that weaving was the most important industry in the 'Abbasid era . In the year 1004 Samsam al-Dawlah ibn 'Adud al-Dawlah assessed taxes on the cotton and the silk manufactured cloths in Baghdad and its suburbs . He took in advance 1,000,000 dirhams from the bailors who had undertaken the job of collecting the taxes .

al-Hasan , op. cit . , P. 145

32) al-Duri , op. cit . , PP. 103—104

palm leaves flourished as well . The most celebrated were those of 'Abbadan , (33) which were exported to Baghdad and other parts of the country . (34)

The weaving industry continued to flourish during the Il-Khan and the following dynasties in spite of the different factors which acted to hinder industry since the 'Abbasids such as the formation of guilds and the imposing of a high amount of money on every manufacturer who was not within these guilds , the civil wars and the frequent changes of dynasty .

The Mongols tried their utmost to encourage weaving by exempting it from taxes and the organising of guilds and establishing the royal manufactory in Baghdad . Al-Kalkashandi mentioned some of the stuffs which were manufactured in Iraq , such as al-Nakh , al-Makhmal , al-Kamkha, al-'Attabi , al-Nasafi and the white woollen stuffs of Mardin . (35)

Important Centres of the Weaving Industry

Weaving was a peculiar industry which was distributed all over the country with its different branches , namely :

33) 'Abbadan was inhabited by mat weavers who used the halfa grass of the island for their industry .

Le Strange , op. cit . , P. 49

Zaidan , op. cit . , vol . 5 , P. 39

34) Zaidan , op. cit . , vol . 5 , P. 39

85) op. cit . , vol . 4 , P. 408

(a) cloth weaving .

(b) carpets .

(c) tents and mats .

The country may be divided into two industrial regions ,
i . e . Iraq and al-Jazira , which coincided with the administrative divisions .

Iraq

Here were manufactured the country's finest silk , cotton , wool and linen cloths , renowned during the 'Abbasid and the following periods . Several centres were specially important .

Baghdad : Baghdad owed its opulence to industry and commerce . (36) There were hundreds of markets , sometimes each market specialised in one kind of industrial product . For instance , Suk al-Thalatha (the Tuesday market) was famous for its Buzz shops , (37) al-Tustariyin where the Tustari stuff was manufactured , al-'Attabiyin where the

36) Schiltberger , Johann, "The Bondage and Travels of Johann Schiltberger " P . 168

37) Buzz was a valuable cotton cloth , and Suk al-Thalatha was one of the most celebrated parts of Baghdad , where the shops of Buzz existed .

Ibn Batutah P . 100 described Suk al-Thalatha as the largest bazaar (Suk) in Baghdad .

Yakut , " al-Mushtarak " , P . 89

Zaidan , op . cit . , vol . 5 , P . 106

al-Duri , op . cit P . 102

'Attabi cloth was manufactured , Suk aa-Saghah (the market of goldsmiths) , Suk al-Safatin (the market of the weavers of palm baskets) , al-Zaradin (the smiths and armourers) , etc .

Baghdad manufactured excellent cotton materials , silk textiles , (38) turbans of thin texture and the celebrated Kasri and Buwaibi towels . (39) The most celebrated were the following .

Al-Washy was the most celebrated and probably the most expensive cloth during the sixth and the following centuries . It was at first embroidered pure silk cloth , but afterwards the silk was mixed with cotton or thread . (40) One dress of al-Washi brocaded with gold and silver cost about 50,000 dinars . (41) This dress was known to the Europeans as " Baldaguin " or " Baldachin " . (42) When Holaku conquered

38) H. A. M. , P. 138

39) al-Duri , op. cit . , PP . 101—102

40) Marco Polo , op. cit . , vol . 1 , P. 65

41) al-Mas'udi , op. cit . , vol . 8 , P. 248

42) It was also called Baudekin after Baldac or Baudac, two names given to Baghdad during the crusade wars and the following centuries .

Arnold , op. cit . , P. 133

Ghanima , op. cit . , P. 566

Jawad , op. cit . , P. 716

Marco Polo , op. cit . , vol . 1 , P. 56

Baghdad part of the tribute was to be paid with that kind of stuff . (43)

Al-Saklatun was a heavy-figured silk stuff mixed with golden threads with a rosy colour , which was chiefly manufactured in Baghdad . (44)

The celebrated 'Attabi (45) were manufactured from a mixture of cotton and silk , (46) striped from side to side , (47) with different colours , (48) which were celebrated throughout the Muslim countries . It obtained a world-wide renown . This name passed into the langu-

43) Ibid , vol . 1 , P . 65

44) It was first known in Baghdad during the 12th century A. D. It was fine , good and expensive cloth . Its threads were mixed with gold . In the year 512 A. H. (1118 A. D.) al-Mustarshid had an order to exempt al-Saklatun from taxes .

Ghanima , op. cit . , p. 567

Jawad , " Tijarat al-Iraq Fi al-Karn al-Sadis Wa Awail al-Karn al-Sabi' al-Hijri " , P . 716

45) The 'Attabiyin quarter of Baghdad , where descendants of 'Attab , an Omayyad prince , lived , was in the 12 th century renowned for the 'Attabi fabric .

Hitti , op. cit . , P . 425

46) Ibn Jubayr , op. cit . , P , 204

47) al-Karmali , " al-Hiyaka Fi al-Iraq " .

M. Gh. T. B. , P. 23 , Bakhdad 1941

48) Because of the stripes of al-'Attabi , some of the Arabs gave its name to the zebra .

Ibn Jubayr , op. cit . , P . 204

ages of Europe in various forms . The name passed into Spanish , Portuguese and Italian as *tabi* , English *taby* (49) French “ *Tabis* ” and Dutch as *Tabyn* . (50)

Another fine cloth known in Baghdad was *al-Mulaham* cloth . Its warp was silk and its weft was plain , or according to *Ghanima* , (51) *al-Mulaham* was a half-silken mixture dress . It was later known as *al-Thiyab al-Mutawakiliyah* . (52) Finally , Baghdad was famous for its *Yakanki* (53) turbans , (54) and *al-Uzur* were produced as well . (55)

49) According to *Le Strange* P. 139 the name *taby* for a rich kind of silk is now obsolete in English , but in the 17th and 18th centuries the word was in common use . *Arnold* added P. 133-4 that in 1661 , on 13 th October , Mr. *Pepys* put on his false *taby* waistcoat; and in 1786 Miss *Burney* attended a royal birthday celebration at Windsor attired in a gown of “ *lilac taby* ” .

50) *Houtsma* , “ *Encyclopaedia of Islam* ” , vol . 1 , P. 513

51) *op. cit.* , P. 567

al-Duri , *op. cit.* , P. 102

52) This dress was called after the Caliph *al-Mutawakil* . During his reign the fashion was *al-Mulahama* dress . He preferred it , and consequentle his attendants did the same . They exaggerated its price , and gave special attention to its manufacture .

al-Mas'udi , *op. cit.* , vol . 7 , PP. 190 - 191

53) *Yakanki* is a Persian word meaning “ *unique* ” .

Karmali , *op. cit.* , P. 26

54) *al-Bashari* ; *op. cit.* , P. 128

55) *Uzur* refers to the large cloaks in which ladies wrap themselves when they go out . *Uzur* were used in Iraq until about 1930 . *al-Bashari* , *op. cit.* . P. 128 .

No doubt the event of the Mongolian conquest (1258 A . D .) and the comprehensive massacre which followed hindered all kinds of industries , and , of course , weaving was among them . It seems that Holaku spared the lives of the craftsmen in the same way that his grandfather had done in Nishapur . We conclude this from the fact that he ordered part of the tribute to be paid with a special kind of material (Baldachini textiles) , and unless he had known in advance that the lives of the manufacturers would be spared , this order would have been without purpose .

Apparently the Il-Khans tried their utmost to rebuild Baghdad and to encourage industry , for in Baghdad was polo's time still the noblest town of Iraq and the manufacture of silk and gold stuffs had not ceased to be a flourishing industry . Marco Polo (56) mentioned different kinds of silk and gold brocades , such as nasich , nac , (57) cramoisy , velvets and many other beautiful richly wrought with figures of beasts

56) op. cit . , vol . I , P. 65 . Another edition , P. 29

57) Nasich and nac were of silk and gold . Marco Polo , op . cit . , vol . 1 , P. 65 . Nasich نسيج is the Arabic form of the English " textile " . Presumably when Marco Polo quoted the following نسيج he thought that they were two kinds of textiles , نسيج « Nasich » and النخ « Nac » , which in fact means " al-Nac textiles . " " Nac " might be a modification of the Nakh textiles mentioned by al-Kalkashandi vol . 4 , P. 408

and birds . (58) According to Howorth (59) the quantity of gold had diminished during the Mongol domination in consequence of the increase in the production of gold tissues . But it seems that the manufacture of golden textiles passed a very critical period when the use of gold was prohibited except where it was needed for the Il-Khan's own wardrobe and those of his chief officers . (60)

Ghazan encouraged and organised the weaving industry in Iraq and in the other provinces of his kingdom . The royal manufactory was well supervised , and many improvements were introduced by 'Ali Shah , the new director of the factory . It produced different kinds of industries and textiles and when the Il-Khan went to Baghdad 'Ali Shah gave him a present — a richly-embroidered cap decked with stones . Weaving continued to flourish during the 14th and the following centuries .

To encourage weaving Abu. Sa'id in 734 A . H . (1333 A . D .) exempted " yarns " from taxes . (61) In his journey Ibn Batutah mentioned some of the textiles manufactured in Baghdad , such as al-Kamkha , which was , according to him , a silk cloth . (62) It seems that al-Saklatun stuffs

58) Marco Polo, op. cit. , vol . I , P. 65

59) op. cit . , part III , P. 525

60) Ibid , part III , d. 370

61) al-'Azzawi , op. cit . , vol . I p. , 513

62) op. cit . , vol . I , PP. 229—230

were manufactured in Baghdad during the 14th and the following centuries . Al-Nuwairi (63) mentioned this kind of textile .

The Jalais encouraged industry as well , and in the year 763 A . H . (1362) a building was constructed for spinners . (64) Hafid Abru mentioned the Baghdad cloth with golden and silver threads . (65) The mention of al-Duri al-Baghdadi , the merchant who traded in Baghdadi textiles in the early 15th century , suggests that the craft of weaving was still pursued . (66) Later on al-Kalkashandi (67) mentioned several textiles being used in Iraq , such as al-Nakh , (68) al-Makhmal , al-Kamkha , (69) al-'Attabi , al-Nasafi and al-Suf al-Abiad al-Mardini (the white wool of Mardin) .

63) op. cit . , vol . I , P. 369

According to al-'Azzawi vol . I , P. 474 in the year 720 « 1320 » al-Salami arrived at Cairo carrying a Suklat tent as a present .

64) " Dhail Jami' al-Tawarikh of Rashid al-Din Tabib", P. 240

65) al-'Azzawi , op. cit . , vol . 2 , P. 105

66) Jawad , Mustafa , op. cit . , M. Gh. T. B. vols. 415—6, p. 263, 1942. The exact name of the merchant was "al-Haj Hasan ibn A'bd-Allah ibn 'Abd al-Mahmud al-Baghdadi " known as al-Duri .

67) op. cit . , vol . 4 , P. 408

68) al-Nakh was described by Dozy vol . 2 , P. 638 and Le Baron Jean vol . IV, P. 43 as a tapis manufactured of cotton and silk.

69) al-Kamkha was described by Ibn Batutah vol . I , PP. 229—230 as a silk cloth . Dozy's words were vol . 2 , P. 487 : " Kamkh Chenille, tissu de soie veloute " .

When Teixeira (70) came to Baghdad he praised the weaving industry there and added that there were more than 4,000 looms for woollen, linen, cotton and silk, and none of them was ever idle. According to Teixeira (71) the cotton and silk used in Baghdad was of local produce.

Basra and Ubulla : In Basra different stuffs were manufactured of raw silk, cotton and wool. It was famous for its kazz and buzz. (72)

Al-Kazz was a very soft texture made of wool and silk. The usual size of a piece of Kazz was 15 dhira'a in length and four in breadth. (73) The best type was tightly woven and heavy in weight, (74) whilst al-Buzz was a fine valuable cotton cloth. (75) Basra produced aprons (fuat) and linen materials of high quality (76) and it was famous for its sack cloths (thiyab al-Khish) . (77)

70) op. cit., P. 41

71) op. cit., P. 41. It seems that this individual craft of weaving continued to flourish during the following centuries. Both Olivier 1800 and Dupre 1806 mentioned woollen, linen, cotton and silk textiles as being manufactured in Baghdad.

al-'Omari, Su'ad, op. cit., PP. 38 - 39, 52.

72) al-Bashari, op. cit., P. 128.

73) al-Duri, op. cit., P. 102.

74) Ibid.

75) Zaidan, op. cit., vol. 5, P. 106.

76) H. A. M., P. 139.

77) H. A. H. p. 121. Khish : cloths from flax fibres finely woven.

(ثياب في نسجها دقة من مشاقه الكتان)

Al-Ubulla was celebrated for its bulli kerchief . (78) It manufactured fine linen , plain and embroidered . (79) Its turbans were excellent . (80)

There is no direct mention of weaving industry in Basra, but , according to Della Valle , (81) there was a bazaar for linen cloth . Presumably weaving was encouraged in Basra by Ghazan , who encouraged industry every where in his kingdom .

Kufa was a desert port of the country . Thus there was a continuous trade between the population of the desert and Kufa . Kufa . produced turbans of Kazz , which were famous for their beauty : (82) some times they were made from pure raw silk , for which it was also famous . (83)

It also manufactured the pure and mixed silken kerchief of the head (which still goes by the name of Kufiya) . (84)

Kufa excelled in al-Washi cloths (embroidered silk cloths)

78) H. A. M. P. 138

79) al-Bashari , op. cit . , P. 128

Ghanima , op. cit . , P. 567

al-Duri , op. cit . , P. 104

80) H. A. H. , P. 121

81) op. cit . , P. 244

82) al-Bashari , op. cit . , P. 128

Ghanima , op. cit . , P. 567

al-Duri , op. cit . , P. 104

83) Le Strange, op. cit . , P. 81

84) Hitti , op. cit . , P. 425

which were manufactured during the 'Omayyad era (namely during the reign of Sulaiman ibn 'Abd al-Malik) for the first teime . (85) Kufa suffered much from the attacks of the nomad Arab brigands in the neighbourhood : thus when Ibn Batutah (86) visited the town , it had already fallen into ruin .

Wasit (87) : Wasit was famous for its trousercods and dyed wool . (88) It was also celebrated for its gilims . (89)

Wasit excelled in curtain manufacturing , which were called al-Wasitiya . (90) Wasit was sacked by the Mongols in 1258 but in the next year Majd al-Din Salih was appointed a governor , and he started to rebuild the town . (91) No

85) al-Mas'udi , op. cit . , vol . 5, P. 400

86) op. cit . , P. 97

87) The lands round Wasit were extremely fertile , and were cultivated with different crops such as cotton . It had two markets which were magnificent and well stocked . Round it there were pasture-land where sheep grazed and from them they got wool, which was used for wool manufacturing .

88) H. A. M. , P. 138 H. A. H. , P. 120

89) Ibid .

Gilim is a Persian word meaning شال " Shal " (Shawl muffler) . It was sometimes used for carrying what was purchased, from the four corners in one hand , and carried on the back .

90) Ghanima , op. cit . , p. 567

Maskuni , " al-Sina'a wal-Tijara Fi Wasit " , p. 303

Sumer , vol. V, No . II , Baghdad 1949

91) Ibn al-Futi , op. cit . , pp. 331—338

direct mention was made of the weaving industry in Wasit during the Il-Khans and the following dynasties . Presumably Wasit produced the same textiles as it did before , because it continued to be a flourishing town until the 17th century .

Besides the previous chief centres there were a few smaller centres . Among these were the following :

Bakdari : Bakdari was a village 40 miles to the north of Baghdad near Awana , where strong coarse cotton stuffs were woven (Thiab Kitn ghilad sifak) . These cotton stuffs were celebrated in Baghdad . (92) Bakdari was mentioned by Ibn 'Abd al-Hak (14th century) but he did not give us any information about the weaving industry in this town . (93)

Harbi was a small town on the Dujayl Canal between Baghdad and Tekrit . It was celebrated for the thick cotton stuffs (Thiyab Kitniya ghalida) manufactured , and exported to other countries . (94) Apparently Harbi continued producing this kind of textile , for Ibn 'Abd al-Hak (95) mentioned Harbi as still celebrated for “ al-thiyab al-Kitniya al Ghalida ” . Ibn Batutah (96) mentioned Harbi when he was going to

92) Yakut ,op. cit . , vol . 1 , p. 475

Ghanima , op. cit . , p . 534

al-Duri , op. cit . , p. 102

93) op. cit . Tomus Secundus , p. 121

94) Yakut , op. cit . , vol . IIV , p. 253

95) op. cit . , Tomus Secundus , p. 292

96) op. cit . , p. 102

Ibn Batutah pronounced the name of the town as Harba .

Mosul , but he did not mention anything about industry .

al-Hadira was a big village not far from Baghdad , (97) where the thick cotton stuffs (thiyab al-Kirbas al-Safik) were manufactured on a large scale and were mostly exported . (98) Al-Hadira was still producing this kind of textile in the time of Ibn 'Abd al-Hak (99) (14th century) .

al-Nu'maniya was celebrated for its looms , like those of Hira . It excelled in all kinds of drab woollen stuffs (Mansujat Suf 'Asaliya) . (100) Nu'maniya was still flourishing during the Mongolian period as a provincial town , (101) but no mention was made of a textile industry .

Khanikin was on the famous Khurasan road , which linked Baghdad with Central and Eastern Asia . It was celebrated for the cotton cloth manufactured there , which was well known in Europe . This was called by the French " canequin " . (102) According to al-Mustawfi , (103) Khanikin in his time was a small village , and no mention was made of the weaving industry in the town .

97) Yakut, op. cit , vol . IIA, p . 292

al-Duri , op. cit . , p. 102

98) Yakut, op. cit . , vol . 2 , P. 293

Le Strange , op. cit . , P. 51

99) op. cit . , Tomus Secundus, P. 309

100) al-Bashari, op. cit . , P. 128

101) al-Mustawfi, op. cit . , P. 53

102) al-Karmali, " al-Hiyaka Fi al-Iraq", p. 20. M. Gh. T. B. 1941

103) op. cit . , pp. 47—48

Sabin was a village near Baghdad , celebrated for the Sabini textiles (thiyab sabiniyah) which were used as women's cloaks (uzur nisaiyah) , made of embellished silk . According to al-Laythi al-Sabiniya stuffs (thiyab) were manufactured of rough flax fibres (mashahat al-Kitan al-ghalid) . (104) No mention was made of this village during the Mongolian period .

Tekrit , lying 30 miles north of Samarra on the west bank of the Tigris , was famous for the wool workers . (105) Al - Bashari (106) called Tekrit the home of wool manufacturers . (107)

Tekrit continued to be a flourishing town during the 13th and the 14th centuries . It was later stormed by Timur who razed walls and massacred most of the people . No mention was made of industry in this town but it might be possible to say that the weaving industry was encouraged in Tekrit during the Il-Khanid period in the same way as it was encouraged in other towns . (108)

104) al-Karmali , op. cit . , P. 26

105) Le Strange , op. cit . , P. 57

106) op. cit . , P. 123

107) al-Bashari , op. cit . , P. 123

108) There were some towns formerly celebrated for their textiles which were in complete ruin before the Mongolian conquest ; for example ;

Hira : This town had been a great city under the Sassanids .—

Tustar : Tustar manufactured several kinds of textiles , such as dibaj , silk and al-Khazz tissues . (109)

Al-Jazira

This was the second industrial region . This region . specialised in cotton cloth manufacturing , but very fine linen , wool and silk fabrics were manufactured as well . The chief weaving centres were :

Mosul

Mosul was described by 'Ali ibn Sa'id al-Maghribi as the capital of al-Jazira , on the western side of the Tigris . It was one of the most beautiful towns by reason of its buildings , orchards and roads . Its population had a liking for industry . (110) Its situation enabled it to become the centre of great trade and communication . The presence in the town of

It was less than a league south of Kufa . When Yakut wrote his dictionary " vol . 11 , p. 375 " it was in complete ruin . Hira manufactured silk , woollen and linen ruffs ; the Hiri skirts were celebrated . al-Duri , op. cit . , p. 104

Kasr Ibn Hubayra : The city was extremely populous . By the early 12th century , however , it appears to have been falling into decay , being eclipsed by the rising importance of Hilla . It had good markets , and was full of weavers . al-Bashari , op. cit . , p. 121 . al-Duri , op. cit . , p. 104

109) al-Kazwini , op. cit . , p. 114

110) op. cit . , p. 73

sufficient skilled labourers , the dampness of its climate and the fertility of the surrounding lands all acted to make Mosul one of the most celebrated towns for weaving , and for cotton -- weaving in particular . Encouragement was given by the governor to this and other industries .

Weaving was known in Mosul a long time before the Islamic conquest . It continued with more improvements until it reached its climax during the Attabic era and during the reign of Sultan Lulu . (111)

According to al-'Omari (112) in the 13th century there were in Mosul :

980 inns for weavers (Khan lil-Haka) .

4 , 020 grinding mills .

99 pressers (to get oil from the sesame) .

75 , 000 handlooms (juma) .

68 water mills .

120 Kaysariya (covered markets with doors locked at night) .

36 markets (suk) .

111) The Attabic era was between 521—631 A . H . (1127—1233 A . D.) followed by the reign of Sultan Badr al-Din Lulu until 1257 A . D.

112) al-'Omari al-Mosuli , " Manhal al-Auliya Wa Mashraba al-Asfiya Min Sadat al-Hadba " , P. 9 M. S.

548 , 000 shops (dakakin) . (113)

No doubt Mosul was one of the biggest industrial towns in the then known world . Its products spread to Europe , Asia and Africa . (114)

Cloths manufactured in Mosul were divided into three kinds in accordance with the raw material used :

(a) Silk fabric : These fabrics were manufactured either of pure silk or mixed with cotton . They were bordered, embroidered with gold and silver threads , with beautiful decorations such as leaves , branches or different kinds of trees. Sometimes they were embroidered with writings (tutaraz bi al-Kataba) , with golden or silver threads . These fabrics were the most expensive and were used by the families of high rank . (115)

(b) Cotton textiles : Mosul excelled in manufacturing cotton textiles called shash (a very fine strong cotton cloth) , which was well known abroad .It was known to the Europeans

113) The figure 543,000 given for the number of shops is too much . Al-Saigh vol . 2 , p. 248 gave the figure as 48,515 , which is more reasonable , but even so it is too much unless we consider that part of the handlooms were in shops and the weaving was practised there .

114) Marco Polo , op. cit . , P. 29 .

Kramers, " Georaphy and Commerce " , P. 104

See Arnold, " Legacy of Islam " .

115) al-Daiwachi, op. cit . , P. 94

as Muslin (mousseline) , which was used as turbans . (116)
Sometimes it was dyed for the women's as well as men's
use . (117) Mosul was celebrated for a special kind of cloth
called al-Muhararat (al-thiyab al-Muhararat) , which was
a mixture of cotton and silk (118) and for al-Kazz cloths .(119)

(c) Wool cloth : This kind of cloth was as perfect as
the previous kinds . Mosul produced " al-Musuh " , (120)
a striped cloth which might be used as a garment or as
a mat (121) and also al-'Attabi . (122)

In the year 656 A . H . (1258 A . D .) there were in
Mosul 980 inns for weavers and 75 , 000 handlooms . If each

116) Marco Polo, op. cit . , vol . 1 , P. 62

Ghanima , op. cit . , P. 566

al-Karmali , op. cit . , P. 29

al-Saigh, op. cit . , vol. 2, P. 228

117) al-Diwachi , op. cit . , P. 94

118) Abu al-Feda , op. cit . , P. 289

Ibn Sa'id , op. cit . , P. 73

119) al-Duri , op. cit . , P. 103

120) al-Musuh is still being manufactured in Mosul , and is
known as " jajim " .

121) al-Duri , op. cit . , P. 103

al-Daiwachi , op. cit . , P. 93

122) According to Abu al-Feda » al-Mukhtasar , vol . 3, P. 116 »
al-Malik al-Ashraf of Damascus was received by the governor of
Aleppo , who gave him five dresses of al-'Attabi of Baghdad , of
Mosul and of Khwarizm .

handloom produced five square metres a day , (123) the whole product would be $75,000 \times 5 = 375,000$ square metres , (124) which is quite a remarkable figure if the number of the handlooms which was given by Sabt Ibn al-Jawzi and quoted by al-'Omari and others was true .

Mosul was conquered by the Mongols in the year 660 A . H . (1262 A . D .) (125) and according to Howorth (126) the whole population , with the exception of the artisans , was put to death .

Nevertheless , when Marco Polo visited Mosul , weaving was still flourishing and the town was still celebrated for its cloth of gold , silk and cotton which were called ' Muslin ' . (127) It seems , however , that the golden tissue industry suffered greatly when the use of gold was prohibited except for that which was needed for the Il-Khan's wadrobe and those of his chief officers . (128) In the 14th century

123) It is estimated today that if a single weaver works from 8 a. m. until 6 p. m. he may knit more than five square metres .

124) According to Ghanima p . 567 the product was 225,000 " taka " a day " al-Taka is between eight and nine dhira' . al-Dhira' is about 64 centimetres " .

125) Ibn al-Futi , op. cit . , P. 348

126) op. cit . , part III , P. 182

127) op. cit . , vol. I, P. 62 . Another edition , P. 29

128) Howorth , op. cit . , part III , P. 370

The) envoy of Ghazan to Egypt , the Kadi of Mosul , was described as wearing a turban , called tarhah , which differed from —

Abu al-Feda praised the weaving industry of Mosul and in particular al-Muhararat cloths . (129)

The mention of 'Iz al-Din Abu al-Mahasin 1378 , (130) and Abu Bekr alMosili in 1392 (131) as still working as weavers in Mosul implies that the craft of weaving was still pursued there .

The weaving industry continued to flourish in Mosul in spite of the different handicaps . In his journey Teixeira mentioned that the merchants of Mosul were trading in fine stuffs . (132)

Amid (Diar Bekr)

Amid manufactured embroidered silk cloth (Washy) , handkerchiefs and woollen cloaks (al-Tayalisa) . (133) It seems that Amid continued to be an important centre for weaving .

Mardin

Mardin produced cotton in great quantities in the neighb-

the others in that one of the ends of the " Muslin scarf " fell over the shoulder .

Ibid , part III , P. 457

129) Abu al-Feda , op. cit . , P. 289

130) al-Daiwachi , op. cit . , P. 43

131) al-'Azzawi , op. cit . , vol . 2 , p. 225

132) op. cit . , p. 52

133) al-Bashari , op. cit . , p. 145

al-Duri , op. cit . , p. 103

ourhood . The cotton was used to prepare the cloths called boccasini . (134) Mardin was also celebrated for the manufacture of woollen fabrics known by its name , (135) and especially those manufactured from goats' wool (mir'iz) . (136)

Mush

Mush was also celebrated for the cotton textiles called boccasini . (137)

Finally , according to Teixeira , men in the towns on the Euphrates used spindles to spin the wool from camels , while the women used wheels . (138)

Socks were manufactured of silk or soft goat hair (mir'iz) . (139) Different kinds of cloth manufactured from camel — hair (wubar) , mir'iz (goat hair) , and oriental cloaks of spun silk were manufactured all over the country (140) which no doubt continued during the following centuries . (141)

134) Marco Polo , op. cit . , p. 29

135) Ibn Batutah , op. cit . , p. 104

136) Ibid . , vol. I , p. 178

137) Ibid . Ibn Sa'id , op. cit . , p. 73

138) op. cit . , p. 53

139) al-Duri , op. cit . , p. 103

140) Hitti . op. cit . , vol , II, p. 425

141) It might be interesting to quote a description by Sir Thomas Arnold " p. 134 " of a fragment preserved in the Colagiata —

Carpets :

In Eastern countries carpets have ever been a symbol of luxury as well as a practical necessity . Carpets , both with smooth surfaces like tapestries , and with loose threads knotted into the fabric so as to produce a velvet-like "pile" surface , are of great antiquity in the East , where they served as sleeping mats and hangings as well as coverings for floors . (142) Rich carpets were spread in caliphal palaces to show their splendour . It is related that when al-Mu'tamid returned to take up his residence in Baghdad , his palace was described as the hall in which were spread golden woven carpets and reed mattings , its doors hung with needful curtains . (143)

dh San Isidoro at Leon which bears an inscription definitely stating that it was woven at Baghdad , perhaps by a master called Abu Nasir , a name that appears in the mutilated lettering in a place where the maker's signature might well be put :

" Woven in red , yellow , black and white . The design is a characteristic early Islamic pattern of about the end of the 10th century in date , showing birds , beasts and foliated ornaments inherited from an older tradition , set in and around large circular panels . A prominent element , the elephant , probably came from India . "

142) Arnold , op. cit . , P. 138

143) Le Strengé , " Baghdad During the 'Abbasid Caliphate " , P. 248 . The most wonderful carpet was the silk carpet " Bisat —

The carpet industry dates back to Babylonian times , (144) and is still being practised in Iraq . Wool was the most important material in the fabrication of carpets , and it served for the pile of all , but there were a few carpets that had silk pile . Cotton and linen were occasionally used as well . (145)

More luxurious than plain carpets were the pile fabrics , the foundation of which consisted of a set of warp and a rather complex weft system : the surface material was fastened into it in various slightly different ways .

The more sumptuous carpets were enriched with threads of gold and silver . (146)

Carpets were used for different purposes . Some were to spread on the ground like busut (large carpets) , and ankkhakh (oblong carpets) : others were hung for decoration and called " anmat " ; a special type were the carpets used

dibaj » , which was woven for Zubaida « the wife of Harun al-Rashid » . It cost 1,000,000 dinars . The other wonderful carpet was that of the mother of the Caliph al-Musta'in . It was decorated with different kinds of animals and birds . Their body was of gold and their eyes of jewels and rubies .

al-Hasani " 'Omran Baghdad " , P.145

Dibaj : pure silk cloth .

Zeidan , op. cit . , vol . 5 , P. 106

144) Fraser , op. cit . , P. 105 .

al-Duri , op. cit . , P. 105

145) al-Hasani , op. cit . , p. 144

146) al-Duri , op. cit . , p. 105

for prayer , “ sijjadah ” . (147)

According to Ibn Rustah (148) al-Nu'maniyah celebrated for its carpets which were called al-Tanafis al-Hiriya (after Hira) . Hira as well was celebrated for its carpets which were described as having designs of elephants , horses , camels and birds . The districts of Maisan and Dastamaisan were celebrated for manufacturing the best carpets and curtains .(149) The curtains made at Wasit were of the best , (150) they were to be found among the furniture of the palace of al-Muktadir . (151) Mosul and Amid produced good curtains , some of them embroidered or woven with gold threads . (152)

Finally , quilts , pillows and various kinds of cushions were manufactured in both Iraq and al-Jazira .

The weaving of carpets continued during the Il-Khans and the following dynasties , and if we accept the definition

147) al-Khatib al-Baghdadi , op. cit . , p. 52

Adam Metz , op. cit . , p. 305

Hitti , op. cit . , vol . 2 , p. 425

al-Duri , op. cit . , pp. 105—106

148) Ibn Rustah , op. cit . , p. 180

149) Ghanima . op. cit . , p. 567

150) al-Bashari , op. cit . , p. 128

Maskuni , op. cit . . p. 727

Ghanima , op. cit . , p. 567

151) al-Khatib , al-Baghdadi , op. cit . , p. 52

Maskuni , op. cit . , p. 303

152) al-Khatib al-Baghdadi , op. cit . , p. 52

of " al-Nakh " by Ibn Mandur , (153) then we can say that there were al-Nakh carpets . (154) Al-Kazwini (155) praised the carpets of Tustar which , according to him , were exported to other countries. He also spoke highly of wall -- tapestries . (156)

In his journey Marco Polo mentioned the velvet stuffs which were manufactured in Baghdad , (157) and perhaps were used for cushions .

The industry of the other manufactured stuffs which were necessary for the furnishing of a house , such as curtains, quilts , pillows , etc . , continued to flourish and their manufacture is still practised in Iraq . Al-Kazwini mentioned curtains and other kinds of furniture as being produced in Tustar . (158)

Olivier (the French traveller — 1800 A . D .) praised the industry of the carpets , velvets for cushions and sofas which were still manufactured in Iraq . (159) It seems that the decay of the weaving industry took place in the 19th and the 20th centuries because the Iraqi individual industry

153) op. cit . , vol . 3 , p. 61

154) According to al-Duri pp. 105-106 Nakb is an oblong carpet.

155) op. cit . , p. 114

156) See the dictionary of Dozy vol . 2 , p. 648 under the article (النخ) .

157) op. cit . , p. 30

158) op. cit . , p. 114

159) al-'Omari , Su'ad , op. cit . , p. 38

could not resist the challenge and the competition of the European industry .

Tents and Mats :

The weaving of tents for the beduins was an important industry . Tents made of wool were called " Khiba " , those made of goat hair were called " fustat " , those of camel hair called " Bijad " and those of cotton called " Saradik " . Special kinds called " Tirraf " were made of a special kind of leather and used for the wealthy . (160)

The mat-making industry flourished in Iraq , because the raw materials were plentiful . They consisted of reeds , (161) papyrus , bulrushes and the palm leaves : (162) all of these materials existed everywhere in country around and in the marshlands (hawr s) , and wherever palm-trees were cultivated .

Sometimes mats were decorated with gold , pearls , pearls , and rubies . (163)

160) al-Duri , op. cit . , p. 108

161) Mats of reed were mentioned among the furniture that existed in the palace of al-Mu'tamid .

Le Strange , op. cit . , p. 81 . al-Duri , op. cit . , p. 108

162) Ghanima , op. cit . , p. 580

163) On the day of his marriage , the Caliph Mamun spread out a mat made of gold , and crowned with pearls and rubies .

Zaidan , op. cit . , vol. 5, pp. 109 , 112

'Abbadan excelled in mat weaving . (164) Most of the population were occupied in this industry , (165) and al-'Abbadani mats and the Sammani , as well , came from there . (166) Some of the 'Abbadani mats were thin , neatly woven , very soft and could be folded like cloth . (167) The reed-mats woven at Baghdad were proverbial for their excellence . (168) Good mats were made at Maisan . Basra also excelled in this industry . (169)

Not only mats were woven but also other necessities were made out of palm leaves . In Baghdad there was a market with 24 shops where the weavers of palm baskets (al-Safatin) had their shops . (170)

The tent industry continued during the 13th and the following centuries . Tents made of saklatun , and Kharkah , were mentioned in the 14th century because they were sent as a gift to the Sultan of Egypt . (171) presumably their

164) Metz, op. cit. , vol. 2, p. 305

165) Le Strange , op. cit. , P. 49

166) H. A. M. p. 139

167) al-Duri . op. cit. , p. 108

168) Ibid .

169) It seems that Basra was the most celebrated town in the mat-weaving industry, because when al-Mu'tasim built Samarra , he sent for mat weavers from there .

al-Ya'kubi , " Kitab al-Buldan " , p. 264

170) Le Strange, "Baghdad During the A'bbasid Caliphate", p.272

171) al-'Azzawi , op. cit. , vol. I , p. 474

industry increased as a result of the domination of tribalism , to supply the needs of the troops and the travellers . John Eldred (1583) bought tents from Baghdad . (172)

As far as mat weaving is concerned there was no mention of the industry in Iraq , but at the same time there is no tangible proof that it was hindered , and presumably it continued . It might even have been encouraged by the Il-Khans who encouraged all kinds of industries . Because the cultivation of date-palms continued to flourish in the country , and the marshlands were still covering most of southern Iraq where reeds grow , the material used for this industry still existed . Al-Nuwairi (in the 14th century) praised the mats manufactured at Baghdad , which were celebrated everywhere . (173)

Dyeing and Bleaching

With the weaving industry there must necessarily have existed auxiliary industry . The most important were dyeing and bleaching .

The variety of colours in the cloths necessitated a developed art of dyeing , and the different kinds of weaving needed different kinds of dyes to clarify the different decorations (roses , branches , animals , birds , etc .) Some

172) Hakluyt , op. cit . , vol. VI , p. 8

173) op. cit . , vol . 3 , p. 370

times one piece of cloth might contain several different dyes . (174) According al-Duri , (175) in making a carpet the dyes were the most important factor after the supply of the wool .

With the exception of Cochineal , the dyes used were vegetable . Indigo was used for all shades of blue : (176) and Madder root for any shade of red from lightest rose to the deepest ruby . (177) Kirmiz was also used for red dyeing . (178) For yellow , pure saffron (Za'faron) was used safflower and the Arabi Saffron (al-wirs) were used as well . (179) The rind of pomegranate provided a cheap ,

174) Ghanima , op. cit . , p. 568

175) op. cit . , p. 109

Black was the colour of the official dress of the 'Abbasids , green was the 'Alawites' colour, pink was used for the Saklatun cloth and yellow garments dyed with saffron were popular among singers . People vied in the brightness and variety of colours in the dresses .

Ghanima, op. cit . , p. 569 . . . Zaidan, op. cit . , vol. 5, p. 83

176) Indigo was imported from India .

Jawad, " Tijarat al-Iraq Fi al-Karn al-Sadis al-Hijri " , p.45

Metz , op. cit . , vol . 2 , P. 264

177) al-Duri , op. cit . , P . 109

178) From the Arabic Kirmiz , the European word crimson or Karmoisin has been taken . Kirmiz was imported from Armenia , especially from Ararat province .

Metz , op. cit . , vol . 2 , P. 265

179) Wirs is a variety of plant : its seeds resemble those of sesame . It was cultivated in the Yemen .

beautiful and durable dye . Dyers were specialized craftsmen . Some of them worked only on one dye . Compound colours were obtained through combinations of the primary colour dyes . (180)

Wasit was famous for its dyed wool (181) especially of Kirmiz colour . (182)

Bleaching was a second auxiliary industry to weaving . This was to get bright white cloth . (183) No doubt bleaching was practised extensively as a result of the flourishing of the industry of weaving and the use of dyes . Presumably sulphur was used as a bleaching material (as it is today) dyes . Presumably sulphur was used as a bleaching material (as it is today) and it existed in several places in the country . (184)

Indigo was mentioned among the Iraqi imports from India . (185) In the year 1639 A . D . Boyakhanah (dye-house) was mentioned as being taxed , and a bailor was supposed to collect the taxes . (186)

180) Ibid .

181) H. A. M., p. 138

182) al-Duri , op. cit . , p. 109

183) When al-Baladhari " p. 358 " was speaking about Nahr Dubais in Basra , he said that this canal was called after a special Dubais , a bleacher who used to bleach cloth near it .

184) See Chapter II , 62

185) Hakluyt , op. cit . , vol . VI , p. 6

186) Serkis , op. cit . . vol . 2 , p. 235

It might be interesting to mention here that the sovereign had special kinds of weaving workshops called " al-Tiraz" houses (Dur al-Tiraz) 187) Their origin goes back to the Sassanid era . 188) The word al-Tiraz originally meant embroidery , and then came to mean the stuffs , ornamented with embroidered bands of writing . The inscription placed on the border of the material contained the name of the ruler with his title or special marks belonging to the king or the sultan . (189) It was worked out in the web of the material with gold thread or bright coloured yarn (Ghazl) which stood against the background of the material . So that it would be recognized by the whole that it was a sovereign dress . (190)

The caliphs constructed special houses in their palaces, which were called " Dur al-Tiraz " , which were an emblem (shi'ar) of sovereignty . Their products of carpets , robes and banners ('Alam , Bunud , Furush) , were used by the caliph or bestowed on high officials as a kind of decoration

187) The term "Tiraz" applies to bands containing inscriptions either woven or embroidered , to the garment so decorated , and also to the factories where such garments were made .

Dimand , op. cit . , p. 249

188) Ibn Khaldun , " Prolegomenes " , vol . 2 , p. 58

189) According to Ibn Khaldun « Prolegomenes vol . 2 , p. 58 » during the Sassanid era the pictures of the kings were used for al-Tiraz .

190) Ibn Khaldun , " Prolegomenes " , vol . 2 , pp. 57—58

Dimand , op. cit . , p. 249

or honour . (191) Goldsmiths and weavers were employed in this Tiraz factory , under the supervision of an official called " Sahib al-Tiraz " . (192) These factories continued producing for a long time until the decline of the 'Abbasid dynasty started . The factories of al-Tiraz stopped working , but the embroidered writings continued outside the palaces , where silk or golden cloths were manufactured . These cloths were called al-Muzakhrafah (the decorated) . (193)

No mention was made of Dur al-Tiraz during the Il-Khans and the following dynasties . But the existence of the royal manufactory at Baghdad and the manufacturing of the tissues needed for the Il-Khans' wardrobe suggests that this royal manufactory replaced Dur al-Tiraz .

3 — Metal Making

It might be interesting to mention here the idea of the

191) Ibid .

192) Ibid .

193) al-Siyuti , op. cit . , p. 300

Ibn Khaldun , " Prolegomenes " , vol . 2 , pp. 57—58

Zaidan , op. cit . . vol . I , pp. 102—105

Ghanima , op. cit . , p. 568

al-Duri , op. cit . , pp. 106—107

Dimand , op. cit . , p. 249 .

According to al-Siyuti " p. 300 " and Dimand " p. 249 " the houses of al-Tiraz existed in all provinces .

Arabs about metals . They used to divide them into two categories :

1 — Visible metals , like bitumen , naphtha and salt . These were considered to be like water , namely a public property allowing everyone to obtain them without and payment .

2 — Concealed metals that were obtained by digging , like gold , silver , iron and lead . These metals were liable to tax . (194) From this tax the 'Abbasids obtained different metals for their industry besides what was imported from other countries .

194) This tax was in kiud and was one fifth of the products .

They used to get the following metals from different countries :

Table 7
Sources of Metals

Metal	Country or Countries
1 — Gold	Khurasan , Ma Wara al-Nahr , (195) Nuba
2 — Silver	“ “ Fars
3 — Turquoise	“
4 — Ammonia	“
5 — Mercury	“ “ “
6 — Iron	Syria , Fars
7 — Zinc	“
8 — Naphtha	“ (-96)

(a) Making of Arms

A warlike people such as the Mongols maintained a great demand for arms . This industry was practised during the 'Abbasid caliphate to a great extent when swords , coats of mail , helmets and arrows were manufactured . (197)

Baghdad was famous for arms making . There was a distinct

195) The Arabs used to call the country to the north of the Oxus " Belad Ma Wara al-Nahr " .

196) Zaidan, op. cit . , vol . I , pp. 177—178

197) Ghanima , oq. cit . , p. 573

quarter for the armourers known as 'Akd al-Zaradin , they being the smiths or armourers who forged coats of mail . (198) Mosul excelled in iron bows and knives . (199)

The caliphs themselves encouraged this industry for the sake of the defence of the empire . (200) Different types of arms were kept at the palaces of the caliphs , at a place known as " Khazanat al-Silah " , and in time of war the suits of armour were taken out and distributed to the soldiers .

This industry was encouraged by the Mongols .

In each province and town there were many armourers who made bows , arrows , quivers , swords , helmets and coats of mail , who received a salary from the State , and in return were to furnish a certain number of arms . In addition , there were in certain towns , such as Baghdad , regular manufacturers of arms under the control of the State .

Ghazan tried to organise this industry which was necessary to supply his military campaigns against Syria . He ordered the manufacturers of each article of arms to form

198) Le Strange, op. cit . , p. 286

196) al-Bashari, op. cit . , p. 145

al-Saigh, op. cit . , p. 228

200) During the riot of al-Basasiri, 30,000 swords were taken out from the palace of the caliph .

Zaidan, op. cit . , vol. 5, p. 112

separate guilds , and in order to increase output he abolished the system of fixed salaries and in its place instituted a system whereby the workers were paid according to the amount of the work they actually performed .

During the 'Abbasid dynasty , Iraq used to import arms , but during the Il-Khan era Iraq became an exporter . According to Ibn Batutah , the king of India had an Iraqi agent for the purchase of arms from Iraq and Khurasan . (201) Ibn Batutah himself bought from an Iraqi merchant in Ghazna a camel with a load of arrows . (202) Both Mosul and Wasit were celebrated for the making of arrows , (203) an industry which no doubt continued to flourish during the Il-Khans , who encouraged this industry everywhere .

(b) Blacksmiths

In addition to the arms making , the ironsmiths , business was known in Iraq as well , and it was practised during the 'Abbasid caliphate to a great extent . The smiths manufactured iron windows , chairs , (204) geometrical instruments , (205) and pots and cups . (206) Coppersmiths made

201) op. cit . , vol . 2. p. 106

202) Ibid, p. 186

203) Ghanima, op. cit . , p. 573

204) Ibid . , p. 573

205) Ibn Khalikan, op. cit . , vol . , 2, p. 185

al-Duri, op. cit . , p. 214

206) al-Mustawfi, op. cit . , p. 55

pots of different sizes , vessels , jars , bronze doors , hanging lamps , candlesticks , etc . Copper , brass , (207) bronze and iron were used . (208) Mosul excelled in the manufacturing of tubes , chains and knives . (209) Basra was also famous in the ironsmith business . (210) According to Ibn Haukal , in the year 1142 only a few quarters were left in Basra : one of them was the copper-smiths' quarter . (211) Samarra was famous for ironsmiths , works but only for a short time . (212)

This industry was encouraged by the Mongols . According to Rashid al-Din , the Il-Khans encouraged iron making . (213)

Ghazan encouraged metal casting and turning . He directed the artisans who excelled in this industry . (214)

207) Brass was used for coating the upper parts of the minarets .
Metz, op. cit . , vol. 2 , P. 271

208) Christie , A. H. , op. cit . , Pl. 117
See Arnold, " Legacy of Islam " .

Ghanima, op. cit . , P. 573
al-Duri , op. cit . , P. 114
al-Mustawfi, op. cit . , P. 55

209) al-Bashari, op. cit . , P. 145

210) Ghanima , op. cit . , P. 573

211) op. cit . , P. 337

212) According to al-Ya'kubi " P. 258 " al-Mu'tasim sent for blacksmiths from different countries when he built his new capital " Samarra " .

213) op. cit . , P. 175

214) Howorth , op. cit . , P. 493

Al-Mustawfi mentioned that Si'rd was famous for its manufacture of copper pots and cups . (215) The mention of metal utensils being taxed during the early years of the Ottoman occupation suggests that this industry was still pursued in Iraq . (216)

(c) Goldsmiths

The flourishing of the goldsmiths' industry was to be expected . The country was very rich : the revenues collected from the different parts of the empire were spent within the country : and the income of the royal and high-ranking families was very high . (217) The luxury of the caliphs and their satellites created a great demand for jewellery so that much gold had to be imported . Thus the goldsmiths' industry flourished greatly .

At Dur al-Tiraz goldsmiths were employed . In addition

215) op. cit . , P. 55

216) al'Azzawi , op. cit .

217) The income of al-Khaizaran was 160,000,000 a year, and that of the mother of al-Wathik was 10,000,000 dinars . So it was not strange to hear that a special carpet decorated with different animals and birds , their bodies made of gold and their eyes made of gems , cost 130,000,000 dirhams . Yahya al-Barmaci paid 7,000,000 dirhams for a Huk (pot) of gold .

al-Mas'udi , op. cit . , vol . 2 , P. 188

Zaidan , op. cit . , vol . 2 , PP. 137, 171

to the usual ornaments for ladies , utensils of gold and silver were made for the rich ; artistically decorated with inscriptions and sometimes decked with pearls . (218)

Goldsmiths' borax (burak al-Saghah) was used for gold and silver welding . (219) Goldsmiths' workshops (dakakin al-Saghah) existed in most towns . (220) In Baghdad there was a special market the goldsmiths , called " Suk al-Saghah " , (221) and sixteen workshops for drawers of gold wires . (222) Basra was famous for the jewellers who sold all manner of curiosities . (223)

Jewellery (mujawharat) was used by both men and women . (224) Rubies , diamonds and emeralds were used by the royal family , and by high officials , while onyx and turquoise were used by the common people . (225)

The goldsmiths' industry continued to flourish during

218) al-Duri , op. cit . , p. 113

219) Metz , op. cit . , vol . 2 , p. 265

220) Ghanima , op. cit . , p. 575

221) Le Strange , " Baghdad During the 'Abbasid Caliphate " ,
p. 218

222) Ibid. p. 273

223) Le Strange , op. cit . , p. 81

224) In the year 1204 the palace of the caliph set on fire .
Some of the burnt articles were helmets ornamented with jewels
and rubies .

Ibn al-Jawzi , " Mira'at al-Zaman " , part 2 , vol . 8 , p. 523

225) Hitti , op. cit . , vol . II , p. 426

the Mongolian period . According to Rashid al-Din the Il-Khans encouraged such industries as jewellery . (226) Marco Polo added (227) that almost all the pearls brought to Europe from India had undergone the process of boring at Baghdad . (228) Apparently this industry was brought to a standstill when the use of gold for bowls was prohibited. (229) This industry flourished again in the reign of Ghazan , who encouraged all kinds of industries . The most celebrated goldsmiths' shops were those in Baghdad . According to Teixeira (230) there was a great street in Baghdad full of gold and silver smiths . In the year 1590 A . D (999 A . H .) Sinan Pasha constructed an inn for goldsmiths . (231) In Mosul there was a special market of al-Sagha (goldsmiths) . In the year 1283 Arghun Khan appointed Sa'd al-Dawla , who was a broker at the goldsmiths' market in Mosul . (232)

226) op. cit . , p. 172

227) op. cit . , p. 30

228) Muhammad al-Sawamli al-'Iraqi died in 706 A. H. « 1306 A. D. » . He worked as a goldsmith and specialised in boring pearls .

al-'Azzawi , op. cit . , vol . I , p. 405

229) Howorth , op. cit . , part III , p. 370

The goldsmiths and others who were thus deprived of a living were given orders to rhe " Chao " bank .

Chao = the paper circulated currency .

230) op. cit . , p. 61

231) al-'Azzawi , op. cit . , vol . 4 , p. 128

232) Abu al-Feda , " al-Mukhtasar " , vol . 4 , p. 18

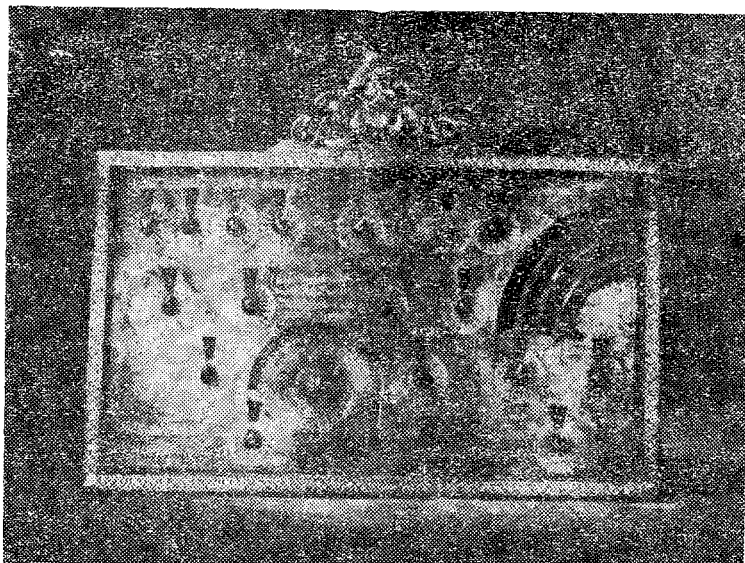


PHOTO No. 1 a
An Astronomical Table .

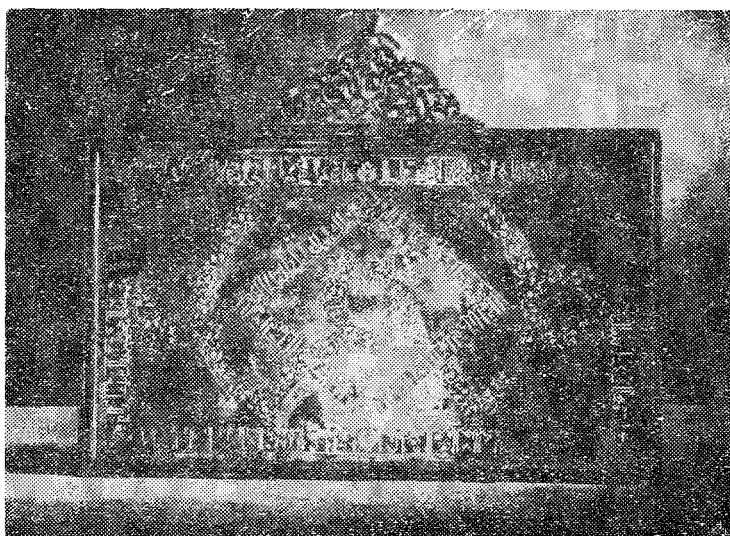


PHOTO No. 1 b
An Astronomical Table.

In Basra as well Della Valle saw a bazaar of goldsmiths. (233)

(d) Inlaying Industry

Other metal industries that flourished at this time included engraving , inlaying , chiselling , damascening , embossing , enamelling and gilding different metals such as copper , brass bronze and iron .

Different kinds of utensils were produced as ewers goblets , salvers , astronomical tables , boxes , etc .

This inlaid metalwork reached perfection about the middle of the 12th century , and persisted in great excellence for two centuries .

The methods used in decorating metals were :

1 — By raising patterns in relief or engraving them .

2 — By inlaying designs in silver and gold , in bronze or brass .

2 — By inlaying designs in silver and gold or in bronze in Kufic or Naskhi styles . (234)

The finest and most ancient kind of patterns were incised in the metal ground , and the grooves were then filled in with gold or silver , both sometimes being used on

233) op. cit . . p. 244

234) See Photographs Nos . Ia and Ib . An astronomical table engraved and inlaid with silver and gold . Made in Mosul by Muhammad Ibn Khutlukh in the year 639 « 1241 » .

The writings were in both styles-Kufic and Naskhi ,

the same object . The brilliance of the design was often heightened by filling other interstices with black mastic composition and in some cases this was the sole method of enrichment . (235)

The district most notable for this art was Northern Mesopotamia (al-Jazira) especially in Mosul , which from 1127 to 1262 was in the hands of the Seljuk Attabics of Zangid dynasty , who were great patrons of arts and crafts . (236) From 1218 to 1233 Sultan Lulu ruled in the name of the Zengid princes . In 1233 Sultan Lulu obtained an investiture from the 'Abbasid Caliph al-Mustansir and took the title of al-Malik al-Rahim . Until his death in 1259 he continued the liberal Zangid tradition which made Mosul a prosperous commercial town and a cultural centre . (237)

Mosul was in close touch with rich copper mines in Arghana Ma'din and Ma'din Khapur , which supplied Iraq and Syria with the necessary ore for the manufacture of brass and bronze objects . (238) The city was full of craftsmen who were renowned for all sorts of artistic

235) Christie , op. cit . , P. 117 see Arnold , " Legacy of Islam " .

al-Daiwachi , " Sina'at al-Mosul Wa Tijaratiha Fi al-Kurun al-Wusta " , pp. 96—97

236) Dimand , op. cit . , P. 144

237) Rice , op. cit . , vol. XIII, part 3, P. 627 . B. S. O. A. S. 1950.

238) Dimand , op. cit . , P. 144

products . (239) Stability of government , the peace and security achieved by the Attabics and the abundance of fuel (timber brought from the mountainous region) all encouraged this industry to flourish .

The methods of decorating combined both writings and drawings . (240) An outstanding piece of the Mosul school is a brass ewer made in 629 A . H . (1232 A . D .) by Shu'ja , Ibn Mana ' of Mosul . (241) The ewer is made of brass entirely covered with designs inlaid in silver . Every part of the surface is heavily enriched with figure subjects , geometric or floral patterns and inscriptions . According to Dimand (242) the Mosul style in this ewer was fully developed . Every inch of the surface is inlaid with silver , and the whole background is covered by a meander pattern , which was greatly favoured by Mosul metal-workers . Another specimen is a box made of brass entirely covered with designs and writings inlaid with silver with the name of Lulu (Badr al-Din Attabic of Mosul 1233 — 1259) . (243) This art continued to flourish in Iraq — especially in Mosul — at least for two centuries after the Mongolian conquest . According to

239) Ibn Sa'id , op. cit . , p. 73

240) See Photographs Nos. 2 and 3 . Both decorations combined drawings and writings .

241) See Photograph No. 2

242) op. cit . , p. 146

243) See Photograph No. 4

Rashid al-Din (244) the Il-Khans encouraged the industry of inlaying metals . In the 14th century Abu al-Feda praised the engraved brass utensils of Mosul which , according to him , were carried to kings . (245) A specimen in the British Museum and belonging to the Mongolian era is of a celestial globe of brass ; made by Muhammad Ibn Hilal of Mosul in 674 A . H . (1275 A . D .) . (246)

Baghdad was famous as well for such an art . A writing case made of brass inlaid with silver and gold bears the name of Master Muhammad Ibn Sunkur of Baghdad , dated 1281 A . D : a good witness to the fame of Baghdad . (247)

This industry continued during the 14th century , until 1399 , when Timur massacred most of the population of Mosul . (248) The craftsmen scattered everywhere ; some were sent to Samarkand , others migrated to Syria , Persia and Egypt , but art of the school of Mosul continued to be traced in Persia and Syria .

244) op. cit . , P. 172

245) op. cit . , P. 289

Ibn Sa'id , op. cit . , P. 73

246) See Photograph No . 5

247) Christie , op. cit . , P. 119

See Arnold , " Legacy of Islam " .

248) Ghanima , op. cit . , P. 575



PHOTO No. 2
Ewer

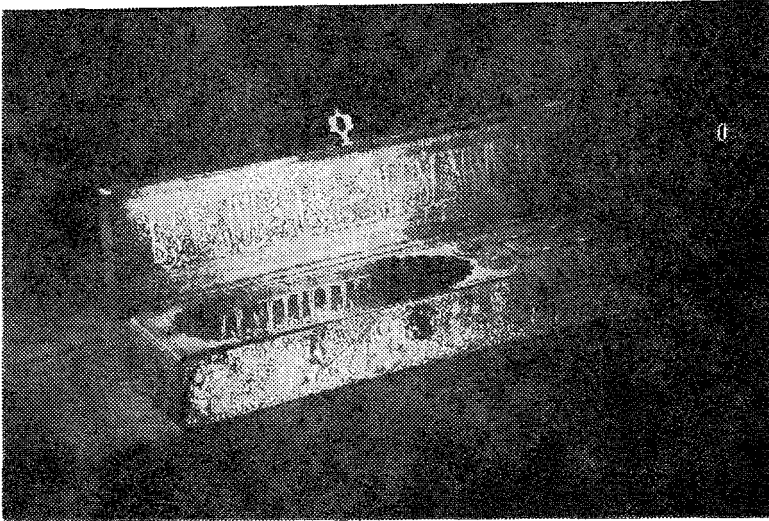


PHOTO No . 3
Brass Writing Box

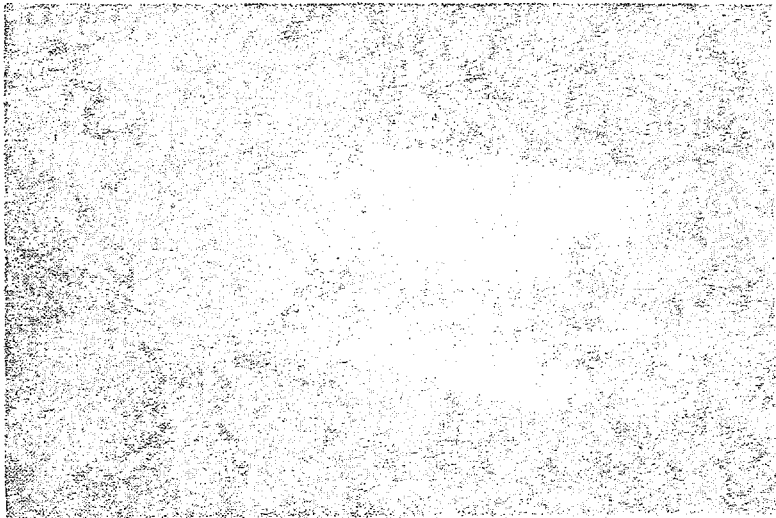


PHOTO No. 3
Zinc-Winning Box



PHOTO No . 4
Brass Box

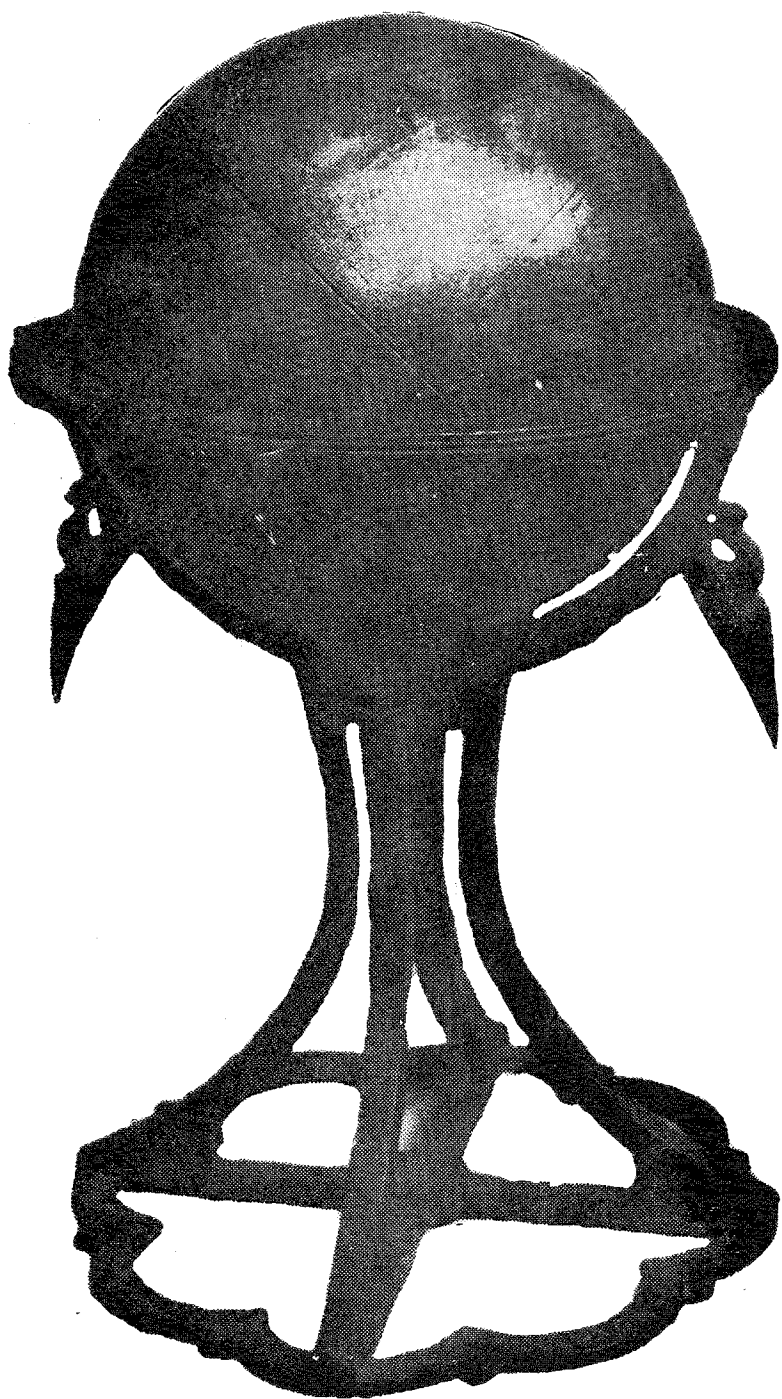


PHOTO No. 5
Celestial Globe



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4 — Paper Making

Paper is an ancient Chinese invention , but when the Muslims captured Samarkand in 704 A . D . , they learned the way to make it from Chinese workmen . (249) A considerable number of Arabic manuscripts were written on paper dated from the ninth century .

Before they knew paper the Arabs used to write on animal skins paper reeds (250) and cloth . (251) The Chinese captives introduced paper making from hemp , flax and grass fibres . (252)

The first factory was constructed in Baghdad at the end of the eighth century , namely in the year 794 A . D . , according to the advice of al-Fadl Ibn Yahya al-Barmaci , who knew paper making when he was a governor at Khurasan . (253) The second factory was constructed at Samarra . (254) From there paper making spread to Europe . (255) The Iraqi factories produced different kinds

249) Arnold , op. cit . , p. 144

250) Hitti , op. cit . , vol. 2 , p. 503

251) Zaidan , op. cit . , vol. 1 , p. 199

252) Hitti , op. cit . , vol. 2 , p. 503

253) Ibid .

254) al-Muta'sim brought paper makers from Egypt to the new capital " Samarra " .

255) The first European paper factories were established by the Muslims in Spain and Sicily , whence the manufacture passed into Italy .

of paper such as : silk-paper , note-paper , strong and weak paper and smooth and ribbed paper . (256) The raw materials used for making paper were hemp , flax , grass fibres , linen and rags . (257) .

When Yakut wrote his dictionary , in 623 A.H. (1226 A.D.) Baghdad was still celebrated for paper making , and an excellent kind of paper was manufactured at Dar al-Kazz suburb , which , according to Yakut , was famous throughout the East . (258) Paper industry continued to flourish in Baghdad during the Mongolian period . Baghdad paper was mentioned by Ibn Sa'id al-Maghribi (259) and in the 14th century Ibn 'Abd al-Hak mentioned Dar Kazz where paper was made in shops (dakakin) . (260) Later on Baghdadi paper was praised by al-Makrizi . (261) According to him and al-Kalkashandi (262) Baghdadi paper was the best kind , and was used particularly for the writing of the Kuran and

256) Khuda, Bukhs, op. cit . , p. 77

257) Hitti, op. cit . , vol . 2 , p. 503

Khuda Bukhs , op. cit . p. 77

258) op. cit . , vol . 2 , p. 522

259) op . cit . , p , 74

260) op. cit . , Tomus Secundus , p. 309

261) op. cit . , vol. 1, part 11 , p. 497

According to al-Makrizi , in the year 1262 the Sultan of Egypt sent a letter to Berka Khan written on 70 sheets of Baghdadi paper . This suggests that the Baghdadi paper was exported to other countries , such as Egypt .

262) op. cit . , vol . 2 , p. 476. vol. 6, p. 190

for the messages of the sultans . Al-Kalkashandi added that Baghdadi paper was thick but soft and smooth and in different sizes .

5 — Glass making :

Glass was manufactured from a special kind of sand which was found abundantly in Iraq , especially near Nejef and Kadisiya . (263) Sometimes “ Jawhar al-Zujaj ” was imported from Jabal Mardin . (264)

The Arabs inherited this industry from the Sassanids and developed it . They increased the proportion of sand so that their glass became harder than others produced . (265)

They developed a characteristic style of glass-decoration, seen upon numerous , bottles , beakers , vases , cups and other objects usually decorated with honeycomb patterns and other designs including inscriptions . (266) They were also painted with figure subjects and formal ornaments in coloured enamels and often heightened with gold . (267) They painted verses on the glasses , and even hunting scenes . (268)

263) Nejef is on the margin of the desert , while Kadisiya strands on layers of conglomerates .

264) Ibn Haukal , op . cit . , p . 143

Jawhar al-Zujaj means the essential element for glass making.

265) al-Duri , op . cit . , p . 112

266) Arnold , op . cit . , p . 129

Dimand , op . cit . , p . 230

267) Ibid .

268) Zaidan , op . cit . , vol . 5 , p . 110 . Abu Nawas the poet—

In a number of the vessels the wheel-cut decoration consisted of raised discs or of hollow medallions placed closely together to form a honeycomb pattern . (269) As early as the ninth century the manufacture of enamelled and drawn glass was known to the Baghdadis . (270) Cups , vessels , bowls , oil-lamps and flasks were made of glass (271) Glass artistically painted , was used for windows , the fixing material being gypsum . Arabesques and inscriptions in different colours usually used were golden , red , green , white and blue . (272) The Iraqis excelled in making glass hanging lamps for mosques . (273) Ibn Jubayr saw in " al-Ka'ba " ("Bait allah") at (Mecca) fine lamps of Iraqi glass with fine decorations . (274) The Iraqi glass was popular as far away as Spain , where it was known as " Iraqa or Irage " . (275)

Glass factories existed in Basra , Kadisiya (276) and

described a decorated glass of wine . He said : The picture of chos-
roes on the bottom , And a scene of horsemen hunting deer , on
the sides .

269) Dimand , op . cit . , p . 232

270) Khuda Bukhs , op . cit . , p . 76

271) Ghanima , op . cit . , p . 573

272) al-Duri , op . cit . , p . 112

273) Khuda Bukhs , op . cit . , p . 67

274) op . cit . , p . 81

275) Ghanima , op . cit . , p . 573

Samarra as well , but in the latter for only a short time . (277)
Baghdad excelled in glass making , especially decorated pots
and cups . (278) Nejef was famous for its crystal ,
of which rings , some varieties of lamps , and decorative
utensils were made . This crystal was known as “ Dur al-Nejef ”
(the pearls of Nejef) . (279)

The glass industry continued to flourish in Iraq during
the Mongolian period . According to Rashid al-Din , the
Il-Khans encouraged glass making and such delicate indu-
stry . (280) Both Ibn 'Abd al-Hak (281) and Abu al-Feda (282)
mentioned al-Kadisiya (283) which , according to them ,

276) According to Mokdasi and others “ Kadisiya ” on the
Tigris was famous for its glass works .

Yakut, op. cit . , vol . 4 , P . 9

Le Strange , op. cit . , p . 51

al-Ya'kubi , “ Kitab al-Buldan ” , p . 264

277) Ibid .

278) Zaidan , op. cit . , vol . 5 , p . 110

Khuda Bukhs , op. cit . , p . 76

279) Ghanima , op. cit . , p . 573

al-Duri , op. cit . , p . 112

280) op. cit . , p . 172

281) op. cit . , Tomus Primus , p . 376

282) op. cit . , p . 299

283) At the present time near the walls of octagonal enclosure
marking the site of al-Kadisiya , and on the river bank , there are
numerous fragments of glass in making . Mason , Major Kenneth ,
“ Notes on the Canal System and Ancient Sites of Babylonia in the
time of Xenophon ” .

The Geog. Jour . , vol. LVI , p . 470, July December 1920.

was celebrated for the glass industry .

Ibn Batutah saw chandeliers and vessels of Iraq glass . (284) This suggests that glass making was still pursued in Iraq , and we also understand that it was exported during the 14th century .

6 — Other Industries

(i) Building Materials

Building materials differed as between the two parts of the country . Al-Jazira used stone and gypsum in building but bricks and gypsum were used in Iraq , The reasons may be stated briefly . The heavy rain in the north and the rocky nature of the country encouraged people to build their houses of durable stone , whereas in Iraq , which had less rain and where clay existed everywhere , bricks were used for building . As fuel for firing bricks and gypsum , timber from northern Iraq , date-palm trunks , palm leaves , " shawk " (thorns) and other materials were used . Alabaster was also used , especially in Mosul . The Mosulese used to engrave writings and scenery on the blue alabaster and sometimes mounted it with white or brown alabaster (hillan) , so that the decorations showed clearly . (285)

284) op. cit . , pp. 126 , 169

He saw the chandelier at Antakiya and the vessels at Khuzistan .

285) al-Daiwachi , op. cit . , p. 98

The floors of rooms were usually paved with bricks cemented with " Kuir " (bitumen) , (286) The principal rooms were decorated with paintings . (287) The conquest of Iraq by the Turkish Seljuks brought about a fundamental change in the sculpture of Iraq and al-Jazira , which under the 'Abbasids had been based almost entirely on abstract ornament. Under the Seljuks figures of men and animals became frequent on buildings . (288) An important building of this period is Kara Sarai (the black palace) . The interior stucco decoration of the palace showed several interesting features, among which figure subjects and birds . (289)

During the Mongolian period the same building materials were used , but the style of building and decoration was developed .

According to al-Mustawfi most of the houses of Baghdad were built of kiln-burnt brick . (290) Al-Kalkashadi added that the style of decoration with bricks was wonderful . (291) Moreover , decoration in this period showed several interesting

286) al-Kalkashandi , op. cit . , vpl. 4 , p' 331

287) Dimand, op. cit . , p. 88

288) Ibid .

289) This palace was constructed in Mosul by Sultan Badr al-Din Lulu . See Photograph No. 6

290) op. cit . , p. 41

291) op. cit . , vol. 4 , p. 331

See Photograph No. 7

features of human beings and animals , (292) besides the naskhi writings . (293) The style of stucco decoration , however , became almost baroque in character . (294)

In the style of building huge domes were introduced , especially in the building of mosques . An important building of the Jalair period of Murjan (during the reign of Sultan Owais) was Jami' Murjan . It was built in the year 1357 by Murjan , the governor of Baghdad . The style of the domes is well developed and inside the mosque over the niche there is very beautiful naskhi writing . (295) This mosque is still in existence in Baghdad .

(ii) Minting

The circulating coins were of gold , silver and copper . The Mongols' coins were the same as those of the 'Abbasids with the exception that the names of the kings or sultans were put on the coins . Sometimes the date of their minting was forgotten . The inscriptions on the coins were in both " naskhi " and Kufic . (296) On some of the coins pictures

292) See Photograph No. 8

293) See Photokraph No. 9

294) Dimand , op. cit . , p. 98

295) See Photograph No. 10

al-'Azzawi , op. cit . , vol . 2 , p. 84

296) See Photograph No. 11a and 11b

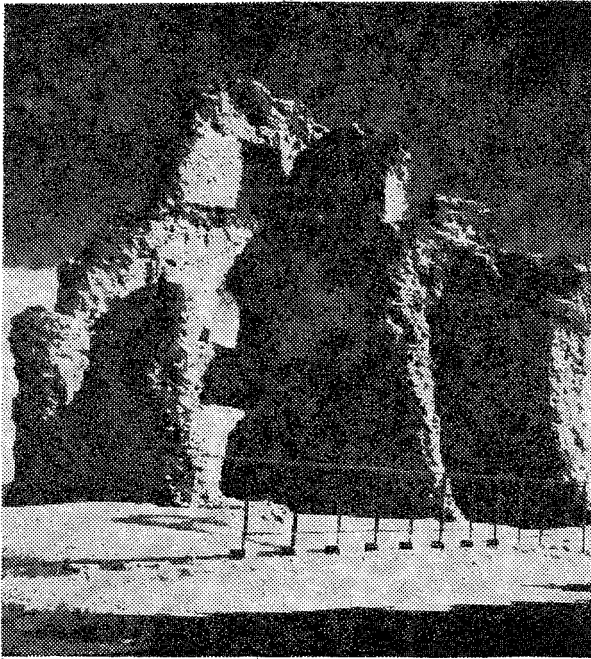
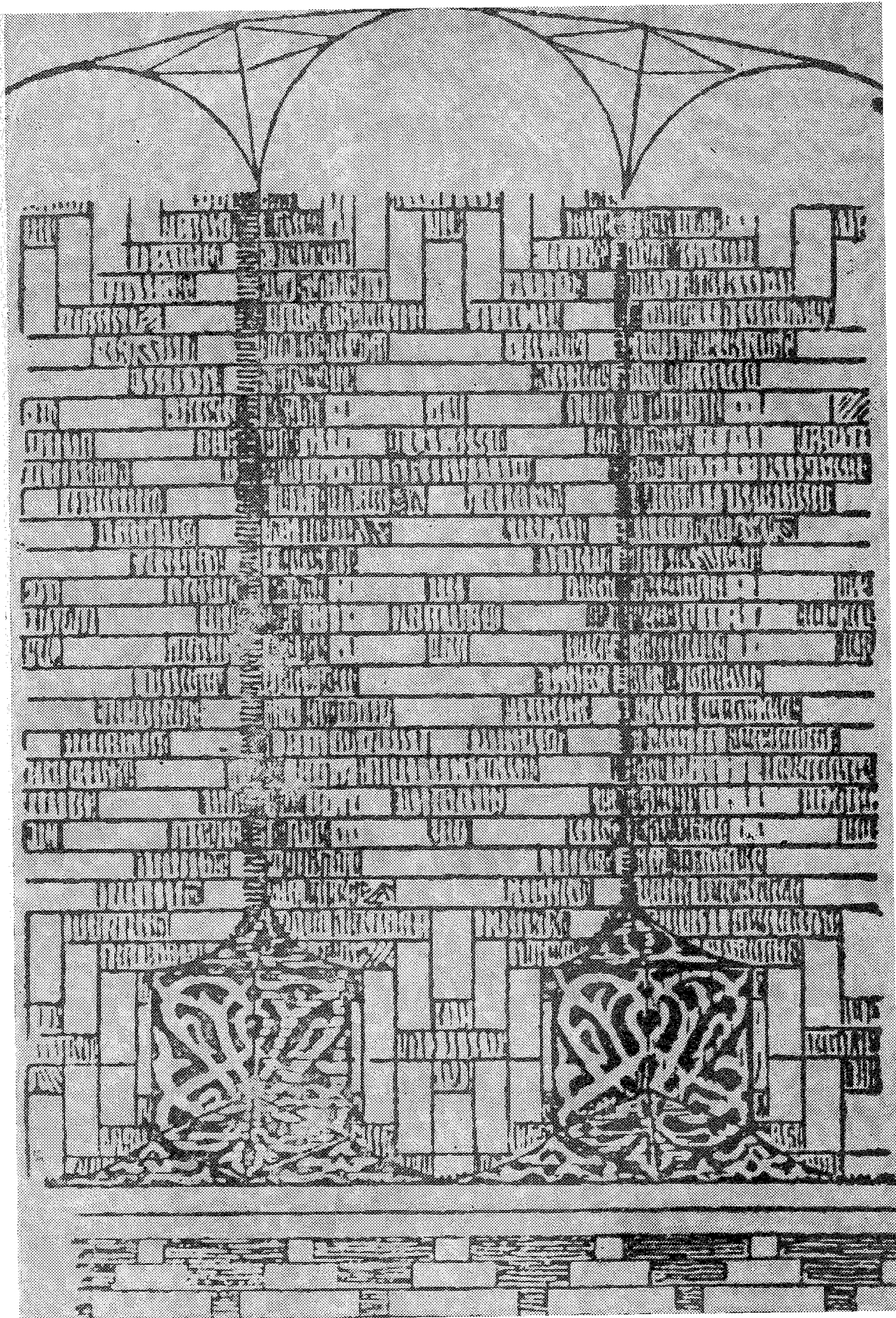
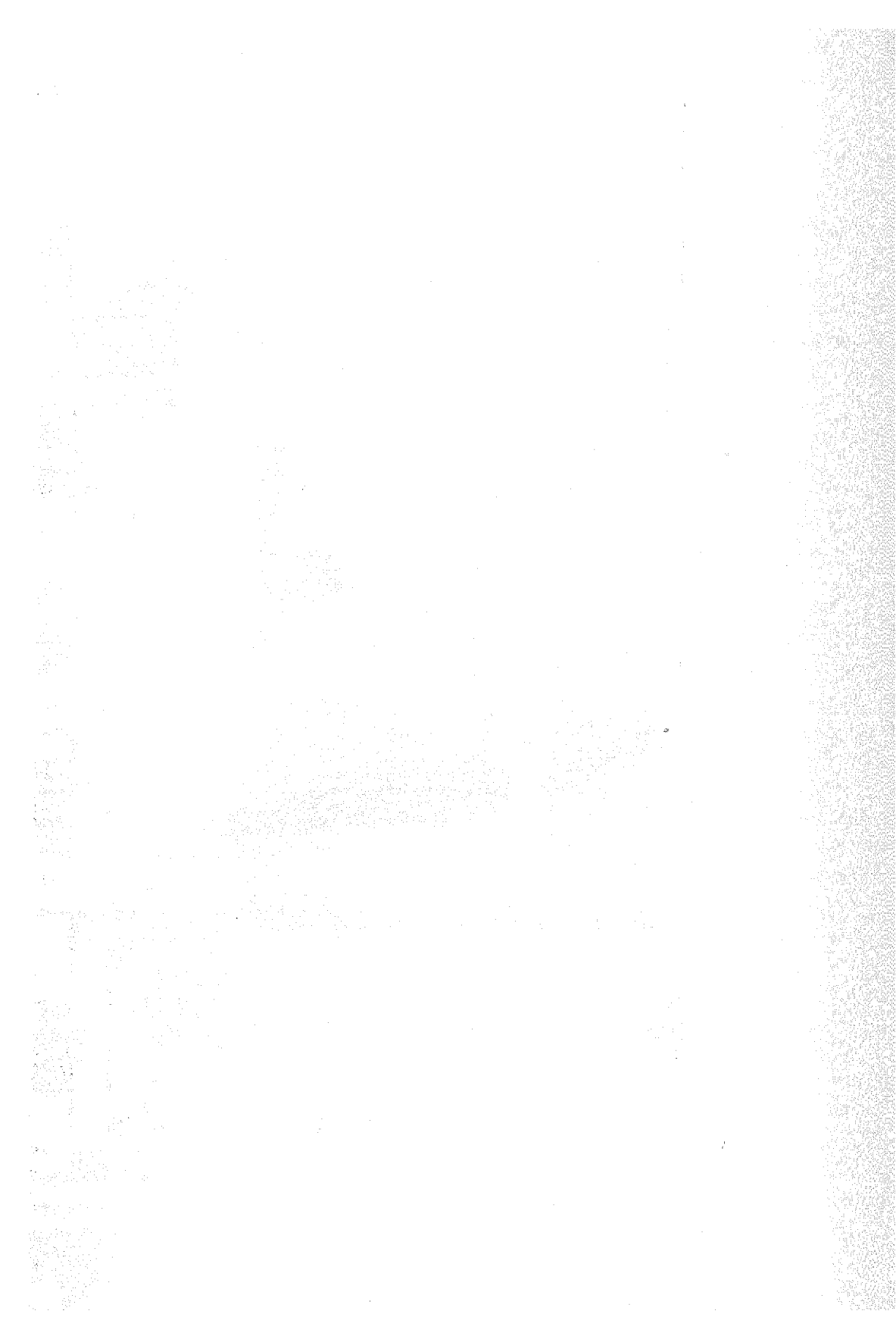


PHOTO No . 6
Kara Sarai



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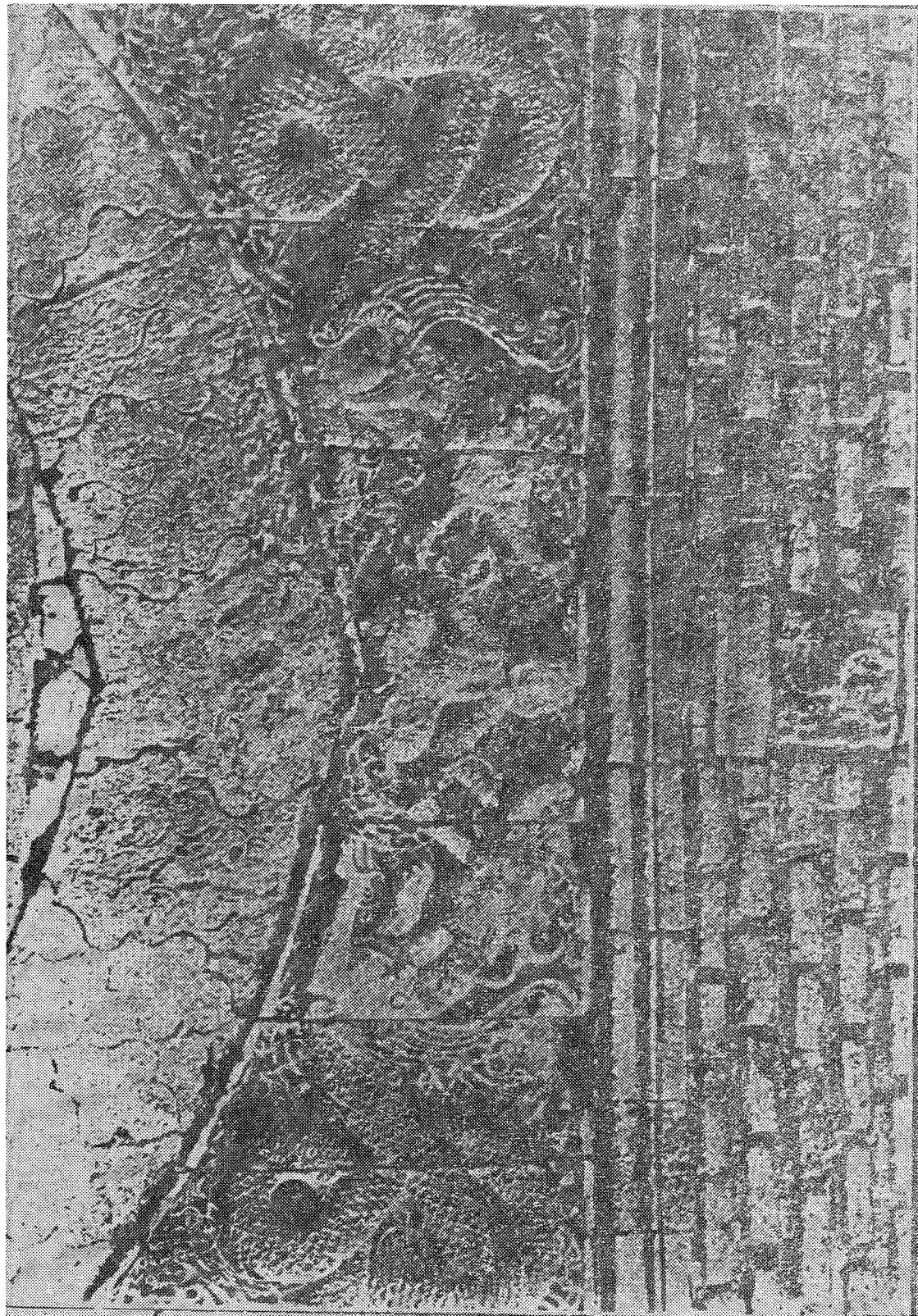
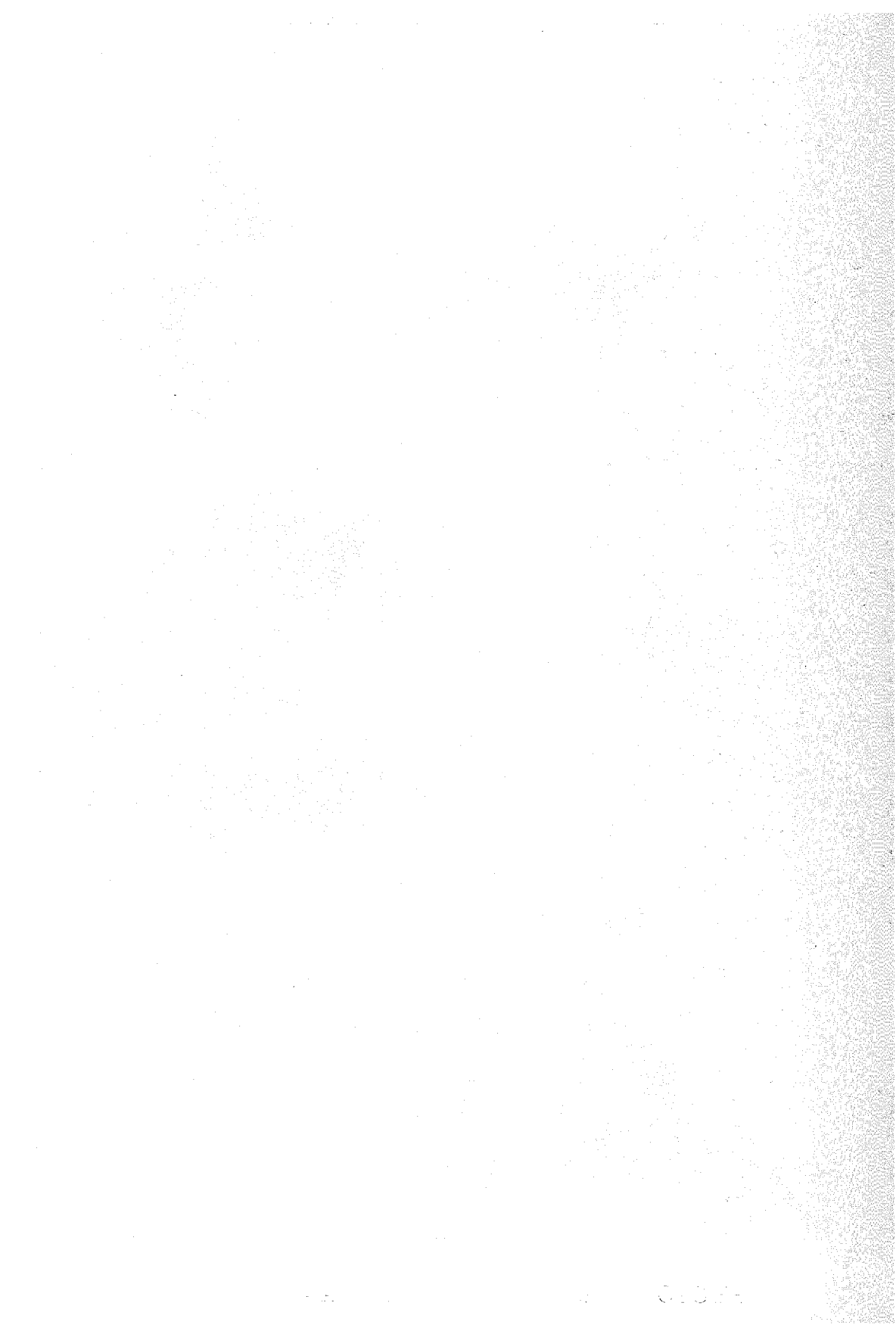


PHOTO No. 8 Decoration on Bab Al-Tilsm



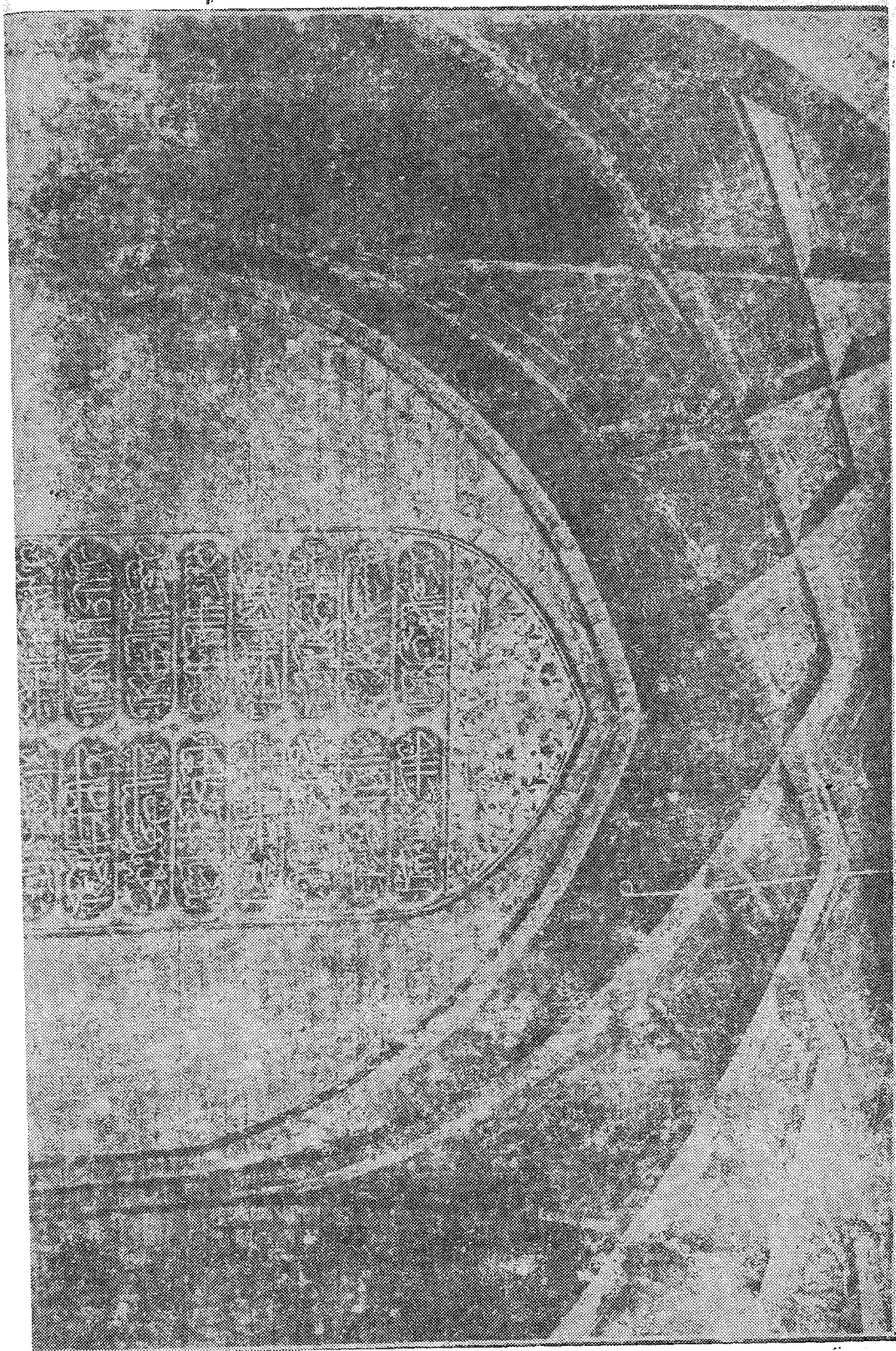
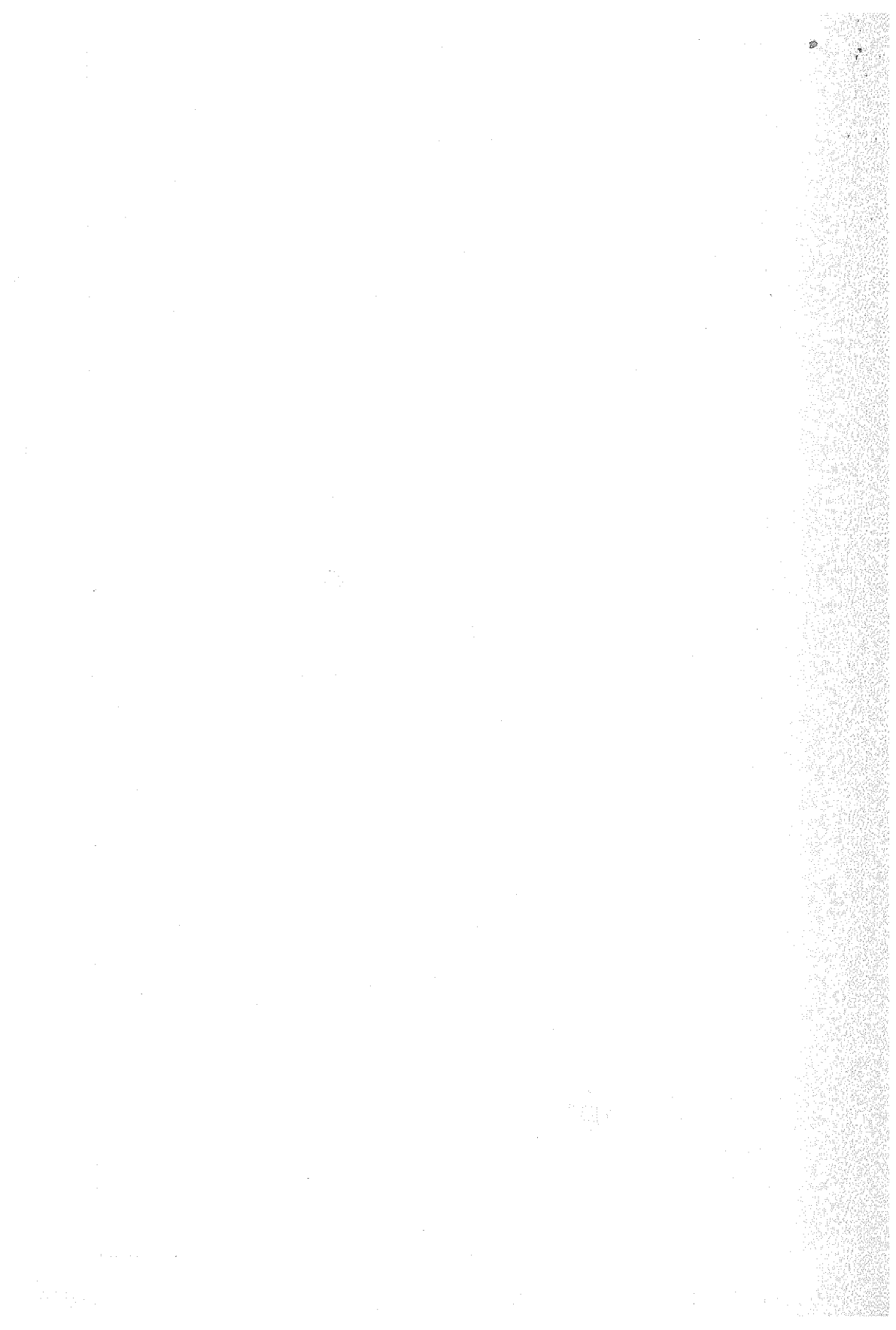
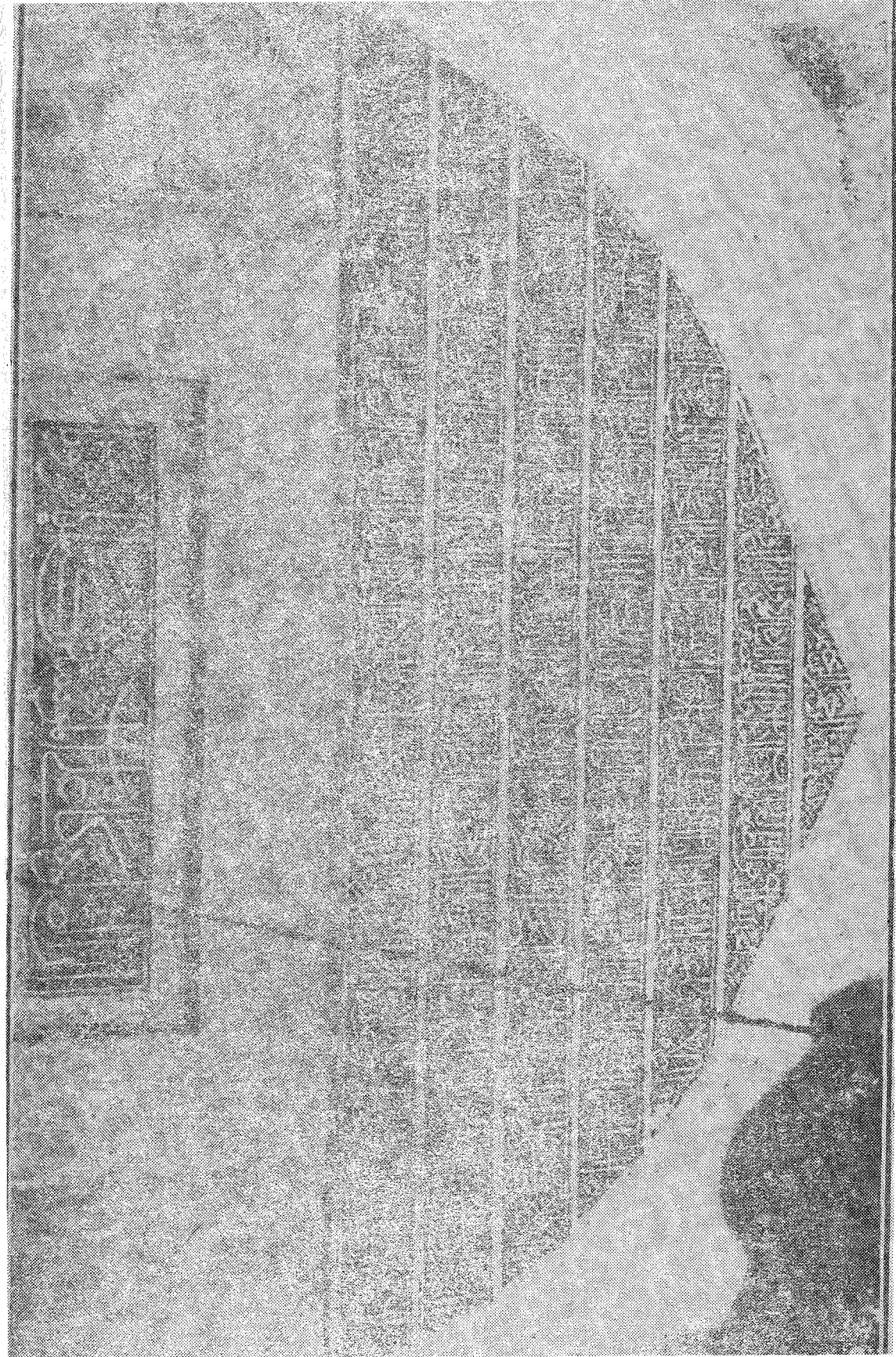
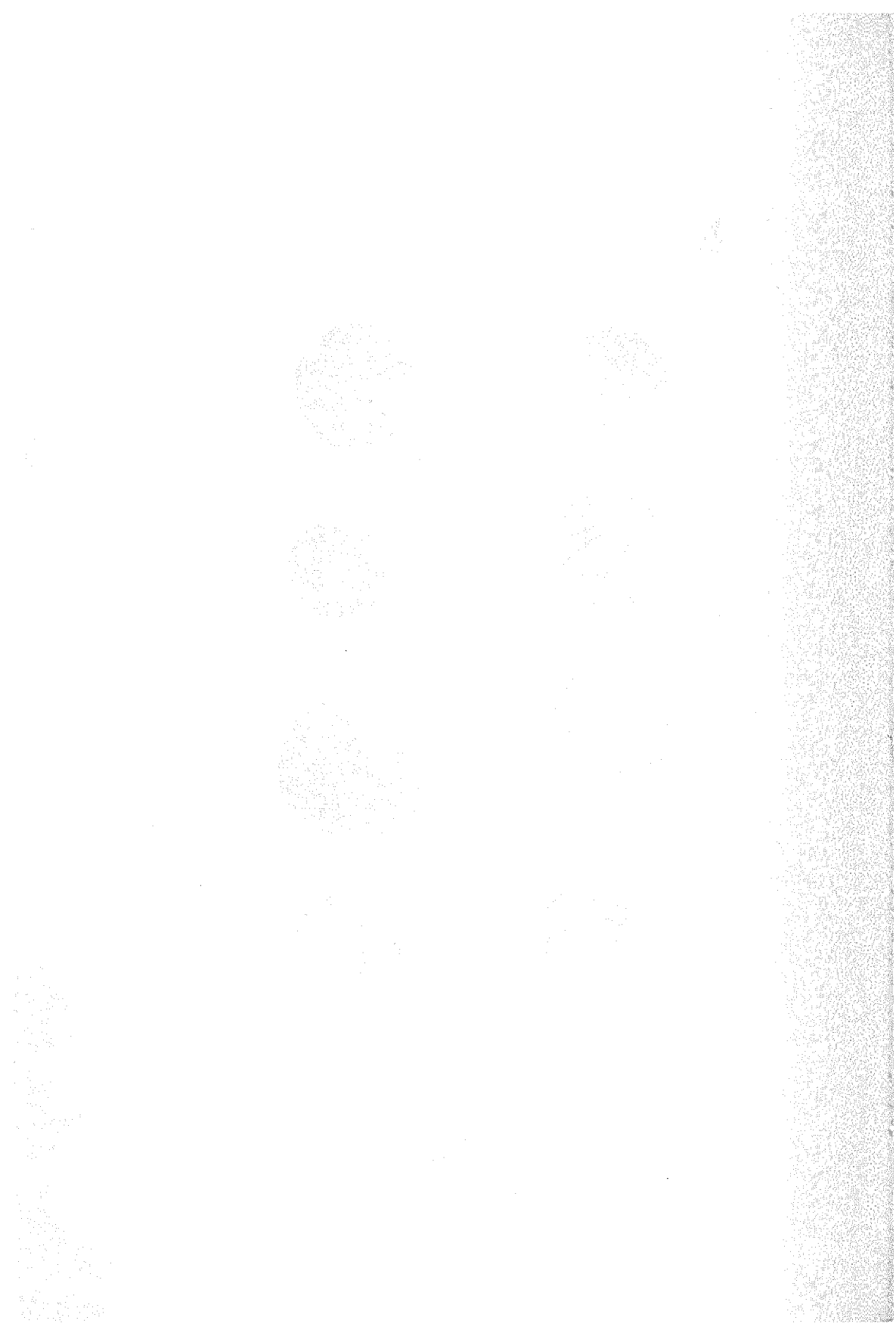


PHOTO No. 9 Writings on the Niche of Jami' Murjan







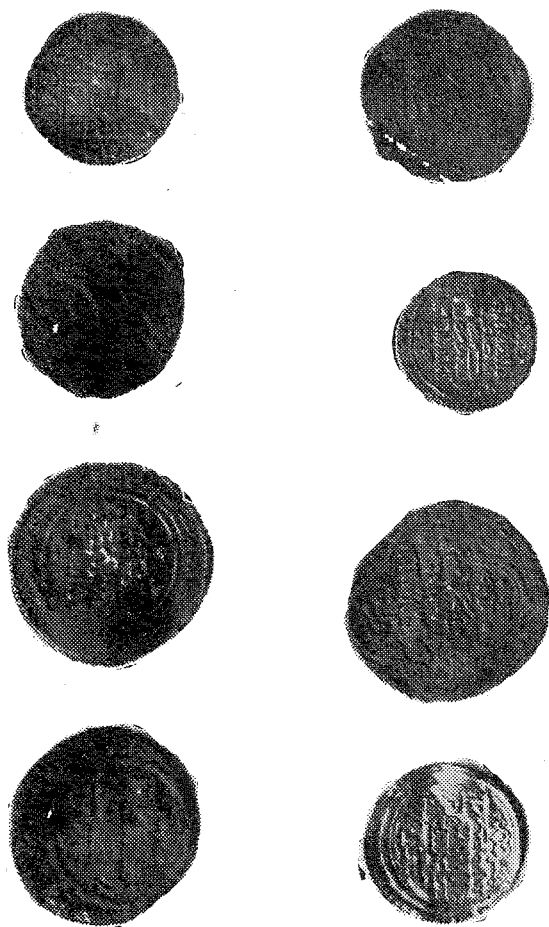
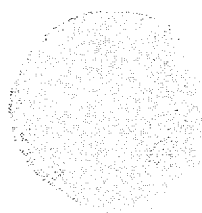
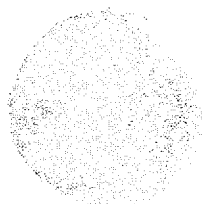
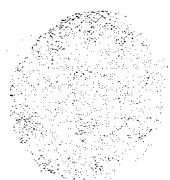


PHOTO 11 a
Mongol Coins



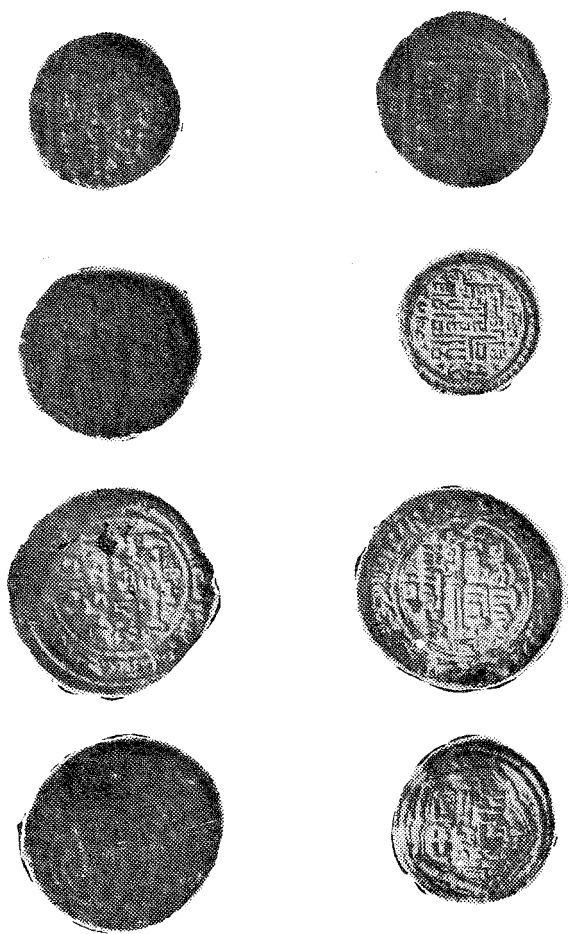
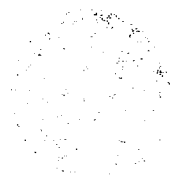
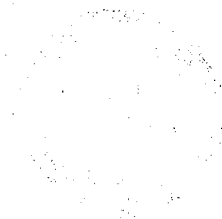
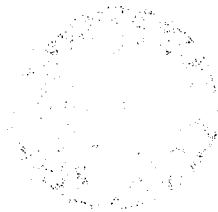
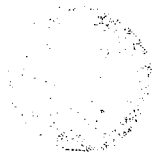
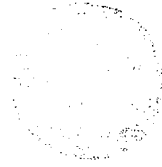


PHOTO 11 b
Mongol Coins



W. H. OTORI
1900-1901

of human beings or animals were printed . At the end of the 13th century " Sadr al-Din " tried to put in circulation paper money called Chao (after the Chinese chao) . For the issue of the chao a mint was founded in each province , which had its governor , scribes and cashiers .

The use of metal currency was prohibited throughout the kingdom . At the same time the use of gold for golden tissues and for bowls was also prohibited . (297) In this way Sadr al-Din tried to collect gold and silver from the markets , but he did not succeed because the chao was not accepted , and in the year 1297 A . D . Sadr al-Din was put to death . (298) Mints existed in Baghdad , Mosul , Basra , Hilla , Sinjar , Mardin and Arbil .

(iii) Wine Making

Although alcohol was absolutely prohibited by the Muslim faith , the Muslims were so shameless and faithless that they were not only drinking it but producing it as well . Even the caliphs themselves (during the Omayyad and the 'Abbasid periods) , (299) used to have drinks of different kinds , for instance al-Rashid preferred "al-nabidh" (probably red wine) .

297) Howorth, op. cit . , part 111 , p. 370

298) al-'Azzawi , op. cit . , vol . 1 , p. 389

299) Zaidan , op. cit . , vol . 5 , P. 127

Wine was made of different kinds of fruits , namely : grapes,dates ,raisins apples ,apricots , etc .(300) They preferred that made from dates . (301) The most celebrated places for making wine were the early Christian monasteries , Wasit , (302) Katrabul , (303) Tuznabad , (304) etc .

Apparently the Il-Khans encouraged the making of wine especially before their conversion to Islam . We understand from Ibn al-Futi (305) that there was a wine-press factory in Baghdad belonging to the government .

The making of wine fluctuated according to the sultan or the governor . If the sultan was pious then the making of wine was prohibited , otherwise it was encouraged .

In the year 721 A.H. (1321) all the wine was poured out and its making was prohibited , for Sultan Abu Sa'id tried to follow the teachings of the Islamic religion which prohibited the making and drinking of wine . (306)

300) Zaidan , op. cit . , vol . 5 , p. 127

al-Nabidh was made of soaked dates which were left until they were a little fermented .

Hitti , op. cit . , vol . 2 , p. 414

301) Ibid .

302) Maskuni , op. cit . , p. 727

303) The wine made in Katrabul was famous . It was known as al-Katrabuli .

al-Masudi , op. cit . , vol . 6 , p. 358

304) Ibid .

305) op. cit . , p. 401 . His words were :

306) al-'Azzawi . op. cit . , vol . 1 , p. 474

Al-Mustawfi praised the wine of Nasibin . (307) According to al-Kalkashandi , 'Anah was famous for wine making . (308)

(i v) Molasses Making

Molasses was made of dates . Ibn Batutah praised the molasses of Basra which was called " al-Sailan " , and was very delicious , like " al-Julab " . (309) We understand from Serkis that there was a factory for making molasses in Baghdad which belonged to the government . In the year 1639 the " Shira Khana " (the factory where molasses was made) was mentioned as being liable to taxation . (310)

(v) Stationery

Pens were made out of reeds , (311) while ink was made either of Coal -- powder or lamp -- black , dissolved in viscous kinds of liquids such as gum . (312)

Wasit was celebrated for pens made of reeds , (313)

307) op. cit . , p. 105

308) op. cit . , vol . 4 , p. 323

309) op. cit . , vol . 1 , p. 115

310) op. cit . , vol . 2 , p. 235

311) al-Mustawfi , op. cit . , p. 37

Le Strange , op. cit . , p. 40

312) Zaidan , op. cit . , vol . p. 198

313) Ibn Sa'id , op. cit . , p. 194

Maskuni , op. cit . , p. 728

and continued to be famous for this industry until the 11th century (A . H .) (seventeenth A . D .) . (314) Kufa was also famous for making pens . According to al-Mustawfi , the reeds that grew at Kufa were larger and better than those found in any other province . (315)

(vi) Copying and Binding of Books

The art of making a book needed the work of a number of specialists . The writer (al-Khatat) or the copier (al-Nasakh) , the painter (al-Musawir) , the leaf cutter (Kati') the gilder (Mudhahib) , the binder (Mujallid) , the preparer of the gold-sprinkled paper , the designer of the lined borders , the restorer of old manuscripts and the master who put together the wonderful albums called " murakka'at " , as separate craftsmen . (316)

The art of calligraphy was Cultivated by the Muslims from earliest times and was more esteemed than that of painting . The two principal styles of Arabic writing were the Kufic and al-Naskhi . (317)

314) Le Strange , op. cit . , 40

315) al-Mustawfi , op. cit . , p. 37 . Samarra as well was famous for stationery makink . According to al-Ya'kubi " p. 264 " al-Mu'tasim sent for stationery makers from Egypt .

116) Grohmann , Adolf , " The Islamic Book from the VII - XVIII Century " , p. 14

117) Dimand , op. cit . , p. 67

The Muslim art of decorating books became highly developed in the 13th and the following centuries : it grew out of a modest beginning . (318) This art was encouraged by the 'Abbasid caliphs . New immigrants , the Manichaeans , came to Baghdad , and there they enjoyed the favours of the Caliph Mamun who was a patron of arts and science . In the year 923 A . D . the Manichaeans were persecuted and four teen sacks of their books were burnt , from which trickles of silver and gold ran out . (319)

The work of the calligrapher and the painter in the production of a book was completed by that of the binder , to whom fell the responsibility of protecting the pages from injury . For bookbinding leather was the ideal material and it was tooled or stamped , either with or without gold . (320)

The Il-Khans and their successors encouraged the arts of copying and binding of books , and these continued to flourish during the following centuries . Several copies of the Kuran were written in Baghdad , some of them written at the order of the Il-Khans . The best copy of the Kuran is in Leipzig , written in Baghdad in 706 A . H . (1366 — 7) . (321)

118) Ibid , p. 18

119) Ibid , p. 25

320) Ibid , P. 79 . The leather industry had been on a high level in South Arabia from quite an early period . This was a reason for the encouragement of book-binding .

Grohmann , op. cit . , P. 30

321) Dimand , op. cit . , P. 71

'Abd al-Rahim al-Sa'ati , who used to copy the Kuran , died in the year 719 A . H . (1319 A . D .) (322)

The calligraphers of the Mongols followed the style of al-Musta'simi , (323) but foreign styles still appeared in some of the books . According to Dimand (324) the Timurid style appeared in a book copied in Baghdad in the year 799 A . H . (1396 A . D .) . The art of copying and binding reached a high standard during the Ak-Kuyunasty . Very fine samples were left from that period . (325)

vii Carpentry (Ship — building)

Carpentry was an important craft . The timber used was obtained either from the mountainous region (north and north - east Iraq) (326) or was imported . The most celebrated imported timber was Indian teak . (327) Wooden cups were manufactured at Dair al-Jamajim — which was seven miles from Kufa on the way to Basra . (328) Some musical instruments were also fabricated of wood . For the soldiers ,

322) al-'Azzawi , op. cit . , vol. 1 , P. 463

323) It was called after al-Musta'sim , the last 'Abbasid Caliph .
al-'Azzawi , oo. cit . , vol . 2 , p. 335

324) op. cit . , p. 36

325) al-'Azzawi , op. cit . , vol . 3 , p. 321

326) The trees were cut down from Jabal Sha'ran and carried to Iraq .

al-Hamadhani , op. cit . , p. 70

327) Metz , op. cit . , vol . 2 , p. 183

328) Yakut , op. cit . , vol . , 2 , P. 652

al-Jamajim means wooden cups ,

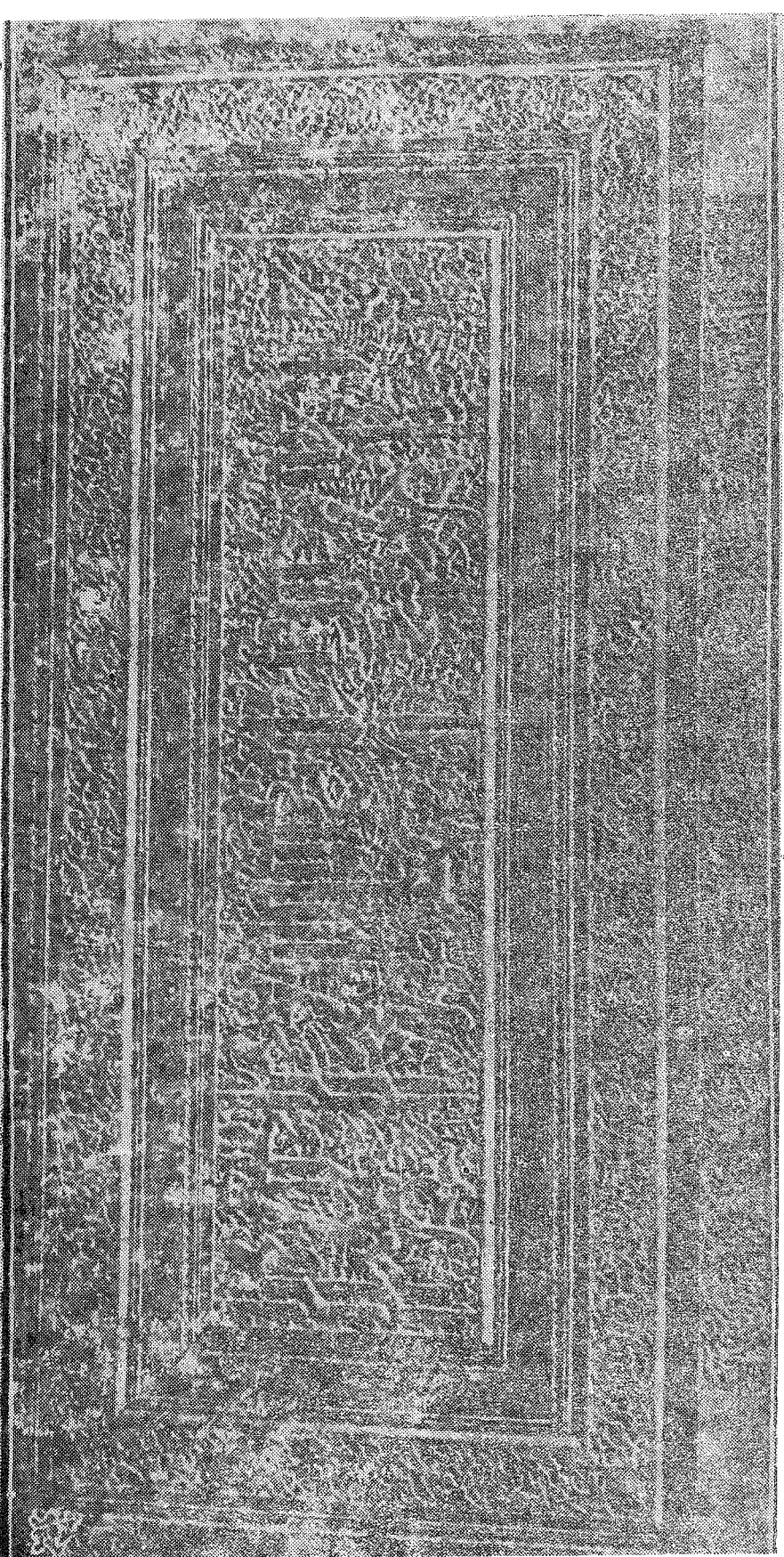


PHOTO No. 12

ALL COPIES

carpenters made arrows , bows , lances , saddles (329) and machines of war .

There was much activity in shipbuilding and boat-building for the purposes of pleasure , travel and war . Pleasure boats such as al-Harakat of al-Amin were artistically shaped in the form of animals , such as lions , elephants , snakes , hawks and horses . (330) Al-Amin spent 3,000,000 dirhams on building one of al-Harakat . (331) Baghdad (332) and Samarra (333) were celebrated for carpentry .

Carpentry was encouraged during the Il-Khan period , (334) to obtain the necessary timber equipment , such as the machines of war and , of course , to supply the domestic needs of the people . The mention of a fleet being prepared in Baghdad suggests that there was a factory for building ships or at least for repairing them . (335)

The art of carving on timber developed during the 13th and the following centuries . Naski and Kufic writings were engraved besides other decoration . (336)

329) According to Jawad " P. 259 " a carpenter made for the Il-Khan a saddle of leather , and it was so perfect that the Il-Khan thought it was of timber , as the saddles were usually made .

330) Zeidan , op. cit . , vol . 11 , p. 137

331) Hitti , op. cit . , vol . 11 , p. 377

332) Ibid .

333) al-Ya'kubi , op. cit . , p. 258

334) Rashid al-Din , op. cit . , p. 172

335) Browne , op. cit . , p. 32

336) See Photograph No. 12

There remain some other industries which were practised as well in the country , such as scent making . Nasibin was famous for rose water industry , (337) and Nejef aswell Ibn Batutah found in Nejef a bazaar for perfumers . (338) Moreover much attention was paid to bridles and saddles -- making ; and presumably shoe -- making .
presumably shoe — making .

For the purpose of tanning , pomegranate skins were used . John Eldred sold the skins of pomegranates to the shepherds to tan their goat skins . (339)

4 — Summary

In the foregoing chapter reference has been made to the different industries which existed during the 'Abbasid and the Mongolian periods .

There is evidence to prove that some of these industries showed marked progress owing to the encouragement of the government and the great demand for their products , either to provide the necessities of the people or for export.

337) Ibn Batutah , op. cit . , vol . , 1 , p. 149

338) op. cit . , p. 81

339) Hakluyt , op. cit . , vol . VI , p. 4

For more details about the industries which flourished during the 'Abbasid caliphate and those which were probably practised during the Mongolian period , see Appendix . 4

The Mongols were alive to the advantages of industry , thus they spared the lives of the craftsmen in both Baghdad and Mosul . Some industries , such as the manufacture of arms , received encouragement from the Il-Khans and their successors .

Ghazan Khan had a fixed plan for the encouragement of industry by forming guilds and establishing the royal manufactory in Baghdad . In this way he provided the industry with the necessary capital .

Some of these industries continued to flourish during the following centuries , while others decayed . The main reason for this decay was the Competition and challenge of the collective European industries , which the individual industry of Iraq could not resist .

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الأفراففة الأارفففة للأمراف ففن الففف الففولف والففف العففاف

١٢٥٨ — ١٥٣٤

أألف

الأففور مأمور شفف الففل

امففاف مساعف بأامعة بغداد

الأفف الأول

مطبعة الآأاف — الففف

١٩٦٥